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Date: May 16, 2012

Initial: L Henderson

Facility Name: ESI Environmental, Inc.

Facility Identification Number: INR 000 022 235 (one folder site)

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Note: Transmittal Letter to Be Included with Reports.

Comments: _____

D. Corrective Action

July 7, 2010

Mr. Tony Martig, Chief – Toxics Section
United States Environmental Protection Agency Region 5
77 West Jackson Boulevard
Mail Code: LC-8J
Chicago, IL 60604-3507

Re: Revised Tank 51 Restoration Work Plan Application
ESI Environmental, Inc. – Indianapolis, Indiana

Dear Mr. Martig:

As previously reported, an incident at the ESI Environmental, Inc., (ESI) facility in Indianapolis, Indiana, resulted in the accumulation of polychlorinated biphenyl (PCB)-containing oils in tanks and piping at the facility. WSP Environment & Energy has been working to remove PCB-containing oils and decontaminate piping and frac tanks. The majority of this work has been successfully completed; however, as discussed below, the decontamination of one of the larger tanks, Tank 51, and the associated piping remains to be completed. The effort and expense incurred to date has been extensive, involving over 110 days of onsite activities and considerable other planning activities. WSP has prepared this application for a work plan to restore Tank 51 in a cost effective and pragmatic manner that is consistent with applicable laws and regulations. This letter also addresses issues relating to the West Million and East Million tanks located at ESI's facility.

Incident Background

The ESI facility operates a commercial used oil processing facility in Indianapolis, Indiana. The facility consists of numerous tanks, sumps, vessels, and pipes used to process used oil and oily water. The oil process diagram is shown on Figure 1 and the plant layout is shown on Figure 2. WSP understands that the facility operates under an analysis plan developed pursuant to 329 IAC 13-7-6 or 40 Code of Federal Regulations (CFR) 279.55, and that before July 18, 2007, ESI relied on generator and transporter knowledge and certification that incoming loads do not contain PCBs. Additionally, ESI regularly samples and analyzes its product oil to confirm no PCBs and samples and analyzes each incoming load for purposes of the "rebuttable presumption" under 40 CFR 279.53 and retains the samples.

On July 18, 2007, ESI was informed by a customer that it had discovered approximately 28 milligrams per kilogram (mg/kg) of PCBs in a used oil shipment from the ESI facility. The customer returned the shipment to ESI, and the returned shipment of the oil was placed in a segregated holding tank. Upon notification, ESI took actions to detect, manage, and contain the material by ceasing to process oil and contacting its customers to recall the oil that may have had PCBs. ESI collected samples for PCB analyses from each of the product storage frac tanks and other process tanks. ESI also systematically analyzed the archived samples of the incoming loads until they identified the loads that contained PCBs. ESI discovered that

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detectable PCBs were present in four loads of oily water from one generator/ transporter received on July 6, 2007 (two loads), July 10 (one load), and July 11 (one load).

As indicated in ESI's letter to you, dated August 9, 2007, decontamination of ESI's equipment began immediately after receipt of the contaminated used oil, followed by more intensive decontamination with kerosene beginning on August 1, 2007, pursuant to the self-implementation regulations set forth in 40 CFR 761.79. As described in follow-up correspondence to EPA, ESI completed three flushes using approximately 2,000 gallons of kerosene per flush. The recovered kerosene was transferred to Tank 51 (also referred to as "L" on Figure 1). Tank 51 is a 40-foot high tank with a diameter of 60 feet.

As described below, the materials conveyed to Tank 51 during ESI's response to the PCB contamination were limited to pumpable materials, which consisted of the liquids and suspended solids that could be pumped through existing and temporary lines. This type of material typically exists in used oil at recycling facilities. The decontamination process that took place at ESI's facility in response to the the PCB contamination is summarized in great detail in an August 23, 2007 email to the EPA and IDEM. According to information in this email and additional information obtained by ESI from current and former employees who were intimately involved in ESI's decontamination activities from July 18, 2007 through August 14, 2007, the materials that were pumped to Tank 51 included all pumpable materials contained in the tanks and equipment, identified in the August 23, 2007 email including oil, decontamination solvent, and other pumpable materials, such as suspended solids. The materials that could not be pumped to Tank 51 were placed in frac tanks 529A and 536A. Recovered centrifuge solids (a.k.a. point "H" on Figure 1) were stored in a 3,000-gallon tank (referred to in this plan as the "centrifuge solids tank"). The solids from frac tanks 529A, 536A, and the centrifuge solids tank were disposed of offsite in accordance with applicable TSCA regulations. In addition, WSP's activities related to Tank 51, conducted from July 2008 to October 2009, were limited to removing materials out of the tank, therefore, no materials from other areas of the facility were pumped or transferred to Tank 51 during WSP's decontamination activities. **In summary, at no point during ESI's or WSP's decontamination activities were solids remaining in any tanks or other vessels physically removed by scraping, shoveling, or other non-pumping activities and placed in Tank 51.**

As discussed in previous correspondence to the EPA from ESI, PCB-containing material was isolated in frac tanks 1, 2, 3, 4, 5, 9, 529A, 536A, Tank 43, Tank 44, Tank 51, and the centrifuge solids tank.

In addition, samples of oil from frac tanks 43 and 44 that were collected by ESI on July 6, 2007, contained 13.28 ppm and 6.76 ppm of PCBs, respectively (Table 1). Subsequent to this sampling, these tanks were flushed and the pumpable liquids removed by ESI; however, ESI did not remove the sludges from the bottom of these tanks. After the liquids were removed, WSP collected a sludge sample from each of these tanks on March 12, 2008; neither sludge sample contained detectable PCBs at reporting limits of 2.0 and 20 ppm.[1] WSP does not believe any additional decontamination of these tanks is warranted because the sludge samples did not exhibit detectable PCBs.

Starting in July 2008, WSP began the removal and transport of oil containing PCBs greater than 50 parts per million (ppm) to the Veolia Environmental Services (Veolia) facility in Port Arthur, Texas, and oil containing PCBs less than 50 ppm to the LaFarge North America/Systech Environmental Corporation (Systech) facility in Paulding, Ohio. The Systech facility was

[1] The sludge samples were sent to a second laboratory after the first laboratory was unable to achieve an acceptable detection limit. The first laboratory had a PCB reporting limit of 20 ppm, while the second had a reporting limit of 2.0 ppm.

approved by the EPA to receive oil containing less than 50 ppm PCBs from the ESI facility in a letter, dated April 25, 2008 (Enclosure A). Approximately 41,000 gallons of oil containing PCBs greater than 50 ppm from frac tanks 1, 2, and 9 were sent to Veolia for thermal destruction, and approximately 69,000 gallons of oil containing PCBs less than 50 ppm from frac tanks 3, 4, 5, 529A, and 536A were shipped to Systech for thermal destruction. The removal of oil from frac tanks 1, 2, 3, 4, 5, 9, 529A, and 536A has been completed.

The cleaning of frac tanks has also been completed. The frac tanks were cleaned and then sampled for PCBs in accordance with 40 CFR 761.300 and 40 CFR 761.272. The analytical results did not detect PCBs, and the rented frac tanks (1, 2, 3, 4, 5, 529A, and 536A) were returned to the tank rental company. Frac tank 9, which is owned by ESI, was returned to service at the facility. No non-pumpable materials generated during the removal and disposal of oil or during the cleaning of the frac tanks were pumped or transferred to Tank 51.

The centrifuge solids tank was also cleaned. Solids were removed, placed in vacuum boxes and shipped to Veolia for disposal. The centrifuge solids tank was then cleaned and sampled in accordance with 40 CFR 761.300 and 40 CFR 761.272. The analytical results did not detect any PCBs. This tank, which was owned by ESI, was also returned to service.

Liquids used to clean frac tanks 1, 2, 9 and the centrifuge solids tank were shipped in bulk or drummed and sent to Veolia in Port Arthur, Texas, or Clean Harbors in Deer Park, Texas for disposal. Liquids used to clean frac tanks 3, 4, 5, 529A, and 536A were shipped in bulk to Systech for disposal.

The West Million Tank

The West Million Tank (referred to as "C" on Figure 1) was impacted by PCBs by the incoming loads received during the period that the facility was operating from July 6 through 11, 2007. The decontamination of the West Million Tank and the likely effect of the water barrier between the oil and solids layers in the West Million Tank were described in ESI's previous correspondence to EPA. Prior to receiving notice of the contaminated loads, ESI continued to operate its facility and ultimately processed approximately 200,000 gallons per day of PCB-free oil through its facility between receipt of the contaminated oil and receipt of notice of the contamination on July 18, 2007. The oil in ESI's processes is an ideal solvent for PCBs because PCBs are highly soluble in that oil. Running oil through the ESI system, therefore, effectively and efficiently removed residual PCBs from the system. The oil acted as a solvent during these 7 days of operation and effectively resulted in flushing the system more than three times as required by the self-implementing decontamination procedures. Thus, sufficient volume passed through the West Million Tank to satisfy the requirements of the self-implementing standard (40 CFR 761.61 (a)). As described above, ESI decontaminated the rest of the process and the overall decontamination steps taken by ESI were approved by the EPA in a September 6, 2007 email from you to Tom Gawlik of ESI. In the email, you agreed that "flushing/decontamination of the process tanks and equipment conducted from July 18 - August 14, 2007 and the supporting PCB test results are acceptable." A copy of the September 6, 2007 email has been attached to this Plan. Therefore, it appears, based upon the above and the attached, that the EPA does not require any further decontamination activities for the West Million Tank. Worth noting is that no PCBs have been detected in the product oil processed through the West Million Tank since ESI completed the self-implementing decontamination procedures described in ESI's August 2007 communications to EPA. In addition, two sludge samples collected from the West Million Tank by ESI on August 8, 2007, one in the front of the process and one at the rear, did not contain detectable PCBs. **In light of the above and the EPA's prior authorization for ESI to utilize and process used-oil through the West Million**

Tank, we ask that you please confirm our understanding that no further decontamination procedures need to be taken with respect to the West Million Tank.

The East Million Tank

The East Million Tank is adjacent to the West Million Tank; the two tanks are reportedly separated by a weir. According to ESI, the East Million Tank receives liquids from the West Million Tank during storm events of sufficient intensity – water collects in the sump on the south side of the West Million Tank and backs up into the West Million, causing liquid to overtop the weir and enter the East Million Tank. Based on discussions with ESI personnel during the March 2008 sampling event, there were no storm events of sufficient intensity during the period of operation after the loads containing PCBs were received and the facility was shut down for decontamination (July 6, 2007 to July 18, 2007).

The East Million Tank was sampled by WSP on March 18, 2008. Two samples were collected: one oil sample from the oil layer and one sludge sample from 1 to 2 feet below the top of the sludge. As presented in Table 2, neither sample contained detectable PCBs at reporting limits of 2.0 and 20 ppm.[2] **Based on these sampling results and the fact that there is no evidence that the content of the East Million Tank came in contact with the PCB-impacted oil, we ask that you please confirm our understanding that no action needs to be taken with respect to the East Million Tank.**

Tank 51

Starting in October 2008, oil containing PCBs less than 50 ppm contained in Tank 51 was transported to Systech for thermal destruction. The process involved mixing the tank to ensure that the loads did not contain too high a water content, pumping the oil into a secondary tank used for mixing, and then loading a tanker from the secondary tank. For a short period of time, the mixing process involved pumping material from the "zero" or bottom valve up to the oil layer in the Tank.

Systech was limited in the number of loads of this oil it could receive each day (3 loads maximum per day depending on the facility operations). Approximately 660,000 gallons of oil from Tank 51 was transported to Systech between October and December 2008: the transportation of oil was shut down for winter in December 2008. Oil removal from Tank 51 and disposal at Systech was completed in August 2009; no readily pumpable material remains in Tank 51. Tank 51 currently contains approximately 250,000 to 275,000 gallons of sludge/solids.

Table 1 presents the results of PCB analysis conducted on two oil samples and one solids sample collected from Tank 51 in March 2008. The results indicate that the oil samples averaged 7.1 ppm PCBs and that the solids sample contained an estimated concentration that was below the reporting limit. In addition, each load received by Systech was tested for PCBs, a total of 113 samples. The average PCB concentration for material loaded from Tank 51 was 5.7 ppm. These data suggest that, while there are PCBs contained in the liquid in Tank 51, the concentrations detected are not excessive and are well below 50 ppm PCBs.

Tank 51 Restoration Application

Objective

As we discussed in our July 15, 2009 meeting, WSP is working to develop a cost effective, pragmatic strategy to restore Tank 51 to enable the tank to be brought back into service. It is believed that Tank 51 contained an unknown fraction of the layer of solids prior to the July 2007

[2] The oil and sludge samples were sent to a second laboratory after the first laboratory was unable to achieve an acceptable detection limit. The first laboratory had a PCB reporting limit of 20 ppm, while the second had a reporting limit of 2.0 ppm.

PCB contamination incident and, to the extent that it can be demonstrated that the solids remaining in the tank do not contain PCBs above detection levels, the strategy is to allow a portion of the solids to remain in the tank. The strategy describes, in general terms, the activities associated with restoring Tank 51 in accordance with the applicable regulations.

The tank will be decontaminated and verified, as described in the following plan. This section presents the regulatory framework, and then presents a proposed alternative to the self-implementing remediation standards.

Regulatory Framework and Discussion

Each of the following TSCA regulations may be applicable to the restoration of Tank 51:

- 40 CFR 761.79: Decontamination standards and procedures
- 40 CFR 761.61: PCB remediation waste
- 40 CFR 761.120: Subpart G – PCB cleanup

Each of these sections contain provisions for alternative decontamination, as described below:

As stated in 40 CFR 761.79 (h), the decontamination standards and procedures include a process for alternative decontamination methods:

> *"Alternative decontamination or sampling approval.* (1) Any person wishing to decontaminate material as described in paragraph (a) of this section in a manner other than as described in paragraph (b) of this section must apply in writing to the EPA Regional Administrator in the Region where the activity will take place, for decontamination occurring in a single Region; … Each application must describe the material to be decontaminated and the proposed decontamination method, and must demonstrate that the proposed method is capable of decontaminating the material to the applicable level set out in paragraphs (b)(1) through (b)(4) of this section."

The alternative decontamination method is presented below.

As stated in 40 CFR 761.61[3], the self-implementing remediation standards the EPA developed are for a general, moderately sized site, and the procedures may be less practical for a larger or environmentally diverse site, as stated in the self-implementing standard citation in 40 CFR 761.61(a):

> "EPA designed the self-implementing procedure for a general, moderately-sized site where there should be low residual impact from remedial activities. The procedure may be less practical for larger or environmentally diverse sites. For these other sites, the self-implementing procedure still applies, but an EPA Regional Administrator may authorize more practical procedures through paragraph (c) of this section."

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[3] Note: page 65 of the January 2009 version of EPA's Question and Answer Manual, located at http://www.epa.gov/waste/hazard/tsd/pcbs/pubs/qacombined.pdf, provides an interpretation of PCB remediation waste. Although the "pipeline liquid" referred to is water, it is reasonable to presume that the statement would also apply to PCB-contaminated oil.

3 Q: How must a company treat water that comes into contact with and is therefore contaminated with PCBs?

A: If the liquid is just water, not associated with a pipeline, such as runoff from a contaminated transformer pad, then it should be treated in accordance with the disposal requirements at §761.60 for PCB liquids, or with the decontamination standards for water containing PCBs at §761.79(b)(1) . If the water is liquid removed from a pipeline (i.e. pipeline liquids), then it should be treated as PCB remediation waste in accordance with §761.61(a)(5)(iv). A technical correction will be made to §761.30(i)(5)(i). The phrase "in accordance with §761.60(a)" will be replaced with the phrase "in accordance with 761.61(a)(5)(iv)".

As stated in 40 CFR 761.61 (c)(2):

> "EPA will issue a written decision on each application for a risk-based method for PCB remediation wastes. EPA will approve such an application if it finds that the method will not pose an unreasonable risk of injury to health or the environment."

Additionally, EPA has flexibility in allowing less stringent alternative requirements under 40 CFR 761.120(c) if the responsible party demonstrates one or more of the following:

- cleanup to the prescribed numerical standards is unwarranted because of risk-mitigating factors;
- implementing the policy is impractical at the particular site; or
- implementing the policy is cost-prohibitive, due to the site-specific characteristics.

The self-implementing procedure is impractical for Tank 51 for the following reasons:

- An unknown fraction of the layer of solids and unpumpable material at the bottom of Tank 51 was in place before the PCB-containing materials were introduced into the tank, and an unknown quantity of solids was present in the PCB-containing oil introduced into the tank. Some solids that were in the materials placed in Tank 51 have likely settled due to the passage of time. WSP believes the pre-existing solids did not mix appreciably with the oil layer above because the solids are denser than the oil. Some mixing may have occurred when the contents in Tank 51 were mixed to provide a more consistent product for shipment to Systech.
- Removing all the sludge from Tank 51 could require openings to be made in the tank, which would then require extensive repairs. When pumping solids from the tank, WSP and its contractor lowered the pump, which weighed approximately 120 pounds, onto the top of the sludge layer. The sludge supported the weight of the pump. This assertion is demonstrated by the results of samples WSP collected by pushing a core sampler into the solids layer, which did not detect PCBs above the reporting limit (see Table 1).
- If the solids must be removed, they may need to be managed as a TSCA waste, unless EPA agrees that the solids are not TSCA wastes or grants a variance from TSCA disposal standards for the solids, or if the solids contain no detectable PCBs. The closest facility that can accept TSCA-regulated solids with any amount of free liquids is the Veolia facility in Port Arthur, Texas. (Systech will not accept this material due to the high solids and low BTU content.) Assuming 2,400 gallons of solids per load, this would require approximately 115 loads and 260,000 miles of truck travel.
- Cleaning the tank and collecting wipe samples every 10 square meters would require that workers enter the tank for extended periods of time using confined space entry procedures. Furthermore, the cost to remove the sludge, manage it as a TSCA waste, and fully comply with 40 CFR 761.61 (a) would be prohibitive (as much as $4 to $5 million).

Restoration Implementation

For the reasons articulated above, WSP proposes an alternate restoration process that is based on the regulations in 40 CFR 761, as discussed below. We believe this proposed process is protective of human health and the environment, meets the requirements of both 40 CFR 761.61(c) and 40 CFR 761.79(h), and can be implemented in a manner to minimize the risk to workers.

As currently designed, the proposed Tank 51 restoration will consist of the following:

1. **Remove ridges on the top of the unpumpable solids:** The existing manway will be used to access the top of the unpumpable solids. A high pressure sprayer equipped with a camera and lights will be inserted in the existing manway and then will be used to smooth out the high spots to allow oil to flow towards the manway. Contractor personnel will not enter the tank, unless absolutely necessary to smooth out the high spots.
2. **Triple Rinse the interior surfaces of Tank 51:** The exposed surfaces in the tank will be triple rinsed with a petroleum-based solvent, such as diesel fuel, using a nozzle powerful enough to reach the other side of the tank from the existing manway. Contractor personnel will spray from the manway using the remote sprayer. The triple rinse will consist of spraying the tank walls, any components, and the solids surface with the rinse solvent. The rinse volume will be 15,000 gallons, which is less than 10 percent of the tank volume (846,000 gallons). Therefore, each rinse will consist of reuse of the 15,000 gallons 6 times.
3. **Collect and test the rinse material**: The rinse material will be pumped out of Tank 51 using the pumping system used to remove the oil from tank into a mixing frac tank for reuse. After the 15,000 gallons have been used 6 times, a representative sample will be collected for testing. A representative sample will be collected by running the mixers in the mix tank for 30 minutes and then collecting a sample from the mixing liquid through the manway in the middle of the mixing tank at a depth of one-foot below the liquid surface. The sample will be tested for percent solids using American Society for Testing and Materials (ASTM) method D1798; if the solvent-oil mixture is greater than 0.5 percent solids (by weight), then the solid and liquid sample phases will be separated in accordance with 40 CFR 761.269 and tested for PCBs in accordance with 40 CFR 761.272. If the first rinse is greater than 50 ppm PCBs, the rinse material will be disposed of as described below and new rinse material will be used. If the rinse material is less than 50 ppm, it will be reused in the second rinse.
4. **Rinses 2 and 3**: The second rinse will be conducted in a manner similar to the first rinse. After the second rinse is completed, the rinse material will be collected and tested as described in step 3. If the results from testing the second rinse indicate a PCB concentration greater than 2 ppm, the rinse material will be disposed of as described below and new rinse material will be used. If the results from testing the second rinse indicate a PCB concentration less than 2 ppm, it will be reused in the third rinse. The third rinse will be conducted in a manner similar to the other two rinses. After the third rinse is completed, the rinse material will be collected and tested as described in step 3. If the results from testing the third rinse indicate a PCB concentration less than 2 ppm, the triple rinse will be considered complete. If the results from testing the third rinse indicate a PCB concentration greater than 2 ppm, the rinse material will be disposed of as described below, and another rinse will be completed. Additional rinses and testing will be completed until the rinse material after a completed rinse cycle is less than 2 ppm PCBs.
5. **Collect unpumpable solid surface samples**: Samples will be collected from the surface of the unpumpable solids. Five samples will be collected from each of the four tank quadrants using threaded PVC piping angled to collect the sample. The sampler will be "pushed" by mechanical means if necessary to collect a sample from 6 to 8 inches. Samples will be collected randomly within the quadrant. Each sample will collected using dedicated piping and sampler. The samples will be analyzed for PCBs in accordance with 40 CFR 761.272. If the surface samples detect PCBs above 1 ppm, then another rinse removing 6 to 8 inches of material in the area above the cleanup standard using new rinse material will be completed, and sludge samples will be collected as described above. If the rinsing process can not remove 6 to 8 inches of

sludge, then other methods to remove the sludge will be employed. If solids testing detects PCBs above 1 ppm, then the process of rinsing and sampling (or material removal by other means) will be repeated until all samples are 1 ppm or below.

Rinse Material Disposal

WSP proposes to transport and dispose of the rinse material at Systech, if the rinse material PCB concentration is below 50 ppm. As you are aware, the EPA has approved, with a TSCA Coordinated Approval dated April 25, 2008, the disposal of "contaminated oil" from ESI at Systech. The approval letter is enclosed as Enclosure A. Under item #10 in the terms and conditions, the approval expires "when 1.5 million gallons of oil currently stored at ESI and the additional waste oil for decontamination have been burned". WSP believes that the TSCA Coordinated Approval has not expired since rinse material to be used in the triple rinsing of Tank 51 is "additional waste oil for decontamination".

If the rinse material PCB concentration is above 50 ppm PCBs, the rinse material will be shipped and disposed of at either Veolia or Clean Harbors.

Summary

WSP believes that the above approach meets the intent of the TSCA regulations, while protecting worker safety and somewhat minimizing the expense. The approach also will allow Tank 51 to be placed back on-line considerably faster than if a generic approach is taken, which will be logistically very difficult to implement.

If you have any questions, please contact John Simon at 703-709-6500 or Dave McLay at 303-850-9200. We look forward to working with you and your colleagues to develop a practical solution to managing the final portions of this project.

Sincerely yours,

John A. Simon
Executive Vice President

David S. McLay, P.E.
Technical Manager

JAS:dsm

Enclosure

cc/encl: Mr. Bradley Grahams, United States Environmental Protection Agency
Mr. George Ritchotte, Indiana Department of Environmental Management
Michael T. Scanlon, Esquire, Barnes & Thornburg LLP
Christopher Ferragamo, Esquire, Jackson & Campbell, P.C.
Mr. Al Nesheiwat, Chartis, Inc.
Mr. Glenn Serrano, Chartis, Inc.

Tables

Table 1
WSP PCB And Percent Water Sample Results Summary
ESI - Indianapolis, Indiana

All Results are for Arochlor 1260 in ppm

					Analytical Laboratory	
		Date		Percent	TestAmerica	TestAmerica
Sample ID	Description	Collected	Matrix	Water (1)	Arvada, CO(2)	Corpus Christi, TX
Tank 51 top	Oil from top of tank	3/12/2008	Oil	0.18	4.9 J	8.1
Tank 51 mid	Oil from middle of tank	3/12/2008	Oil	3.6	<20	6.1
Tank 51 Bot	Sludge from bottom of tank	3/12/2008	Solids	1.5	<20	1.6 J
East Million Top	Oil from top of tank	3/12/2008	Oil	0.12	<20	<2.0
East Million Top of Sludg	Sludge from 1'-2' below top of oil	3/12/2008	Solids	1.8	<20	<2.0
Tank 43	Solids from tank bottom	3/12/2008	Solids	0.50	<20	<2.0
Tank 44	Solids from tank bottom	3/12/2008	Solids	0.77	<20	<2.0
Tank 536A Top	Oil/Water from top of tank	3/12/2008	Oil/Water	0.62	<20	<2.0
Tank 536A Mid	Sludge from tank bottom	3/12/2008	Solids	96	<20	<5.0
Tank 529A Mid	Oil from mid tank	3/12/2008	Oil	1.4	6.3 J	8.4
Tank 529A Sludge	Sludge from tank bottom	3/12/2008	Solids	2.3	2.8 J	6.7

Notes:
1. Karl Fisher Titration for Percent Water - ASTM D 4928
2. Elevated detection limits from dilution due to oil viscosity. Sent samples to laboratory that specializes in oil testing.
Less than (<) value indicates that PCBs were not detected at the reporting limit shown.
J - estimated value. Result is less than the reporting limit.

Figures

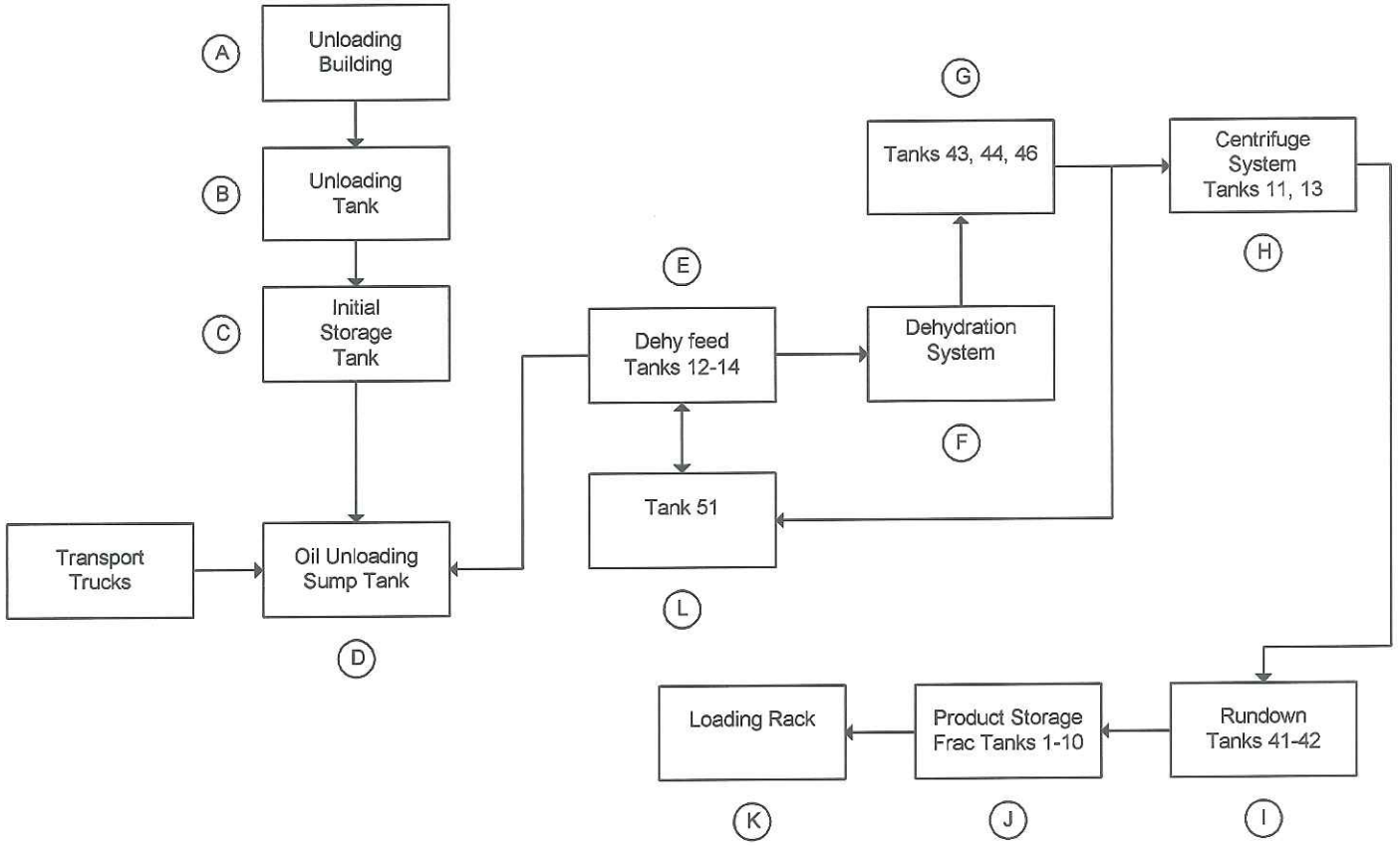

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Figure 1
Process Schematic
PCB Contamination Flow Analysis
ESI Environmental, Inc.
Indianapolis, Indiana

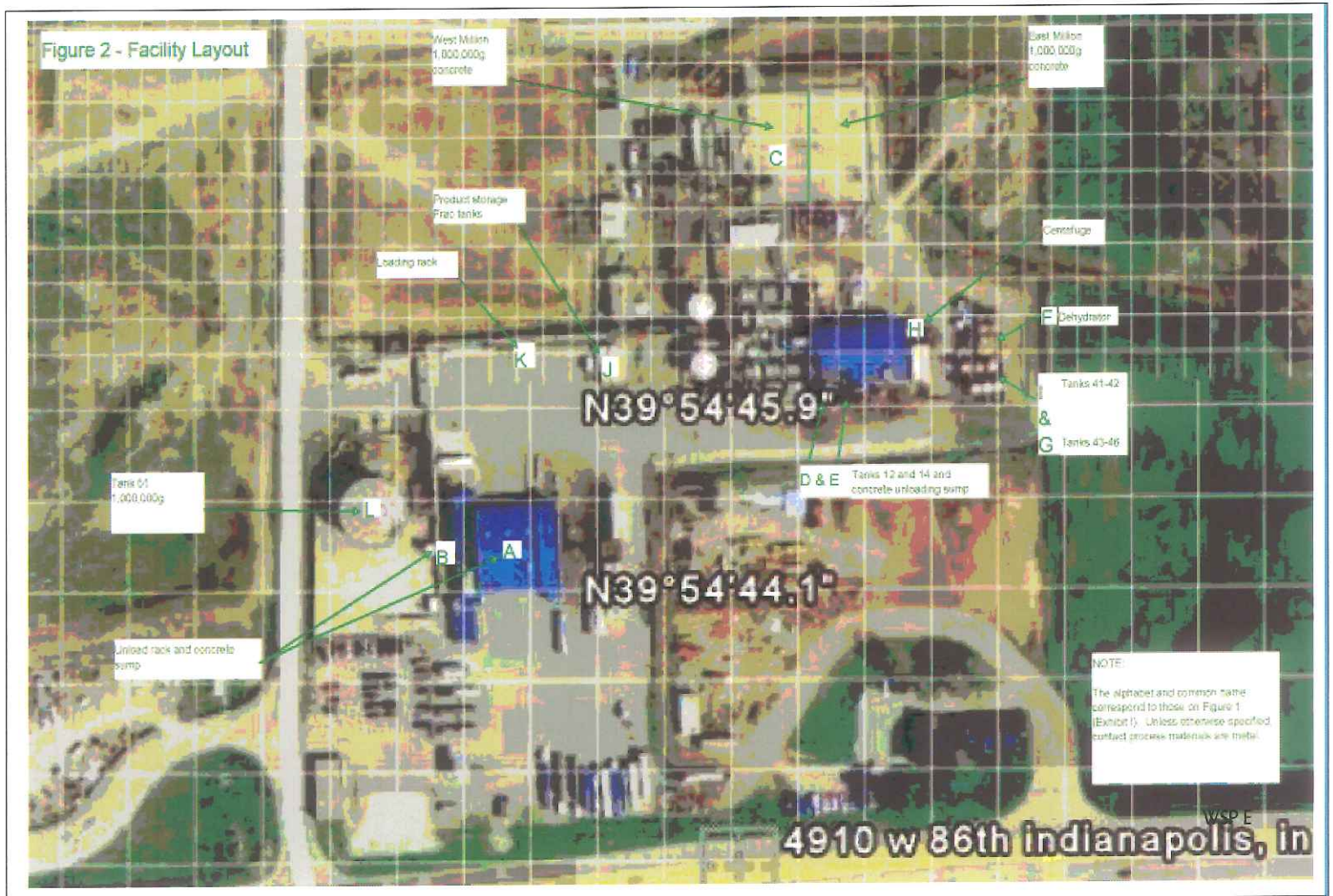

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Figure 2
Facility Layout
PCB Contamination Flow Analysis
ESI Environmental, Inc.
Indianapolis, Indiana

Enclosure A
Systech/LaFarge TSCA Coordinated Approval Letter

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

APR 2 5 2008

REPLY TO THE ATTENTION OF:

L-8J

Certified Mail Receipt No.: 7001 0320 0005 8931 8380
Thomas Spannagl, President
Systech Environmental Corporation
11397 County Road 176
Paulding, Ohio 45879

Certified Mail Receipt No.: 7001 0320 0006 1456 1804
Heinz Knopfel, Plant Manager
Lafarge North America
11435 County Road 176
Paulding, Ohio 45879

Re: TSCA PCB Coordinated Approval
Systech Environmental Corporation (OHD 005 048 947)
Lafarge North America (OHD 987 048 733)

Dear Messrs. Spannagl and Knopfel:

The U.S. Environmental Protection Agency, Region 5, hereby grants a Toxic Substances Control Act (TSCA) coordinated approval (Approval) to Systech Environmental Corporation (Systech) and Lafarge North America (Lafarge) to store and burn 1.3 million gallons of oil containing less than 50 ppm PCBs (contaminated oil) as blended fuel. The contaminated oil will be stored at the Systech facility and burned as fuel in the cement kilns at the Lafarge facility, both of which are located in Paulding, Ohio.

The contaminated oil is currently stored at ESI Environmental, Inc. (ESI) located at 4910 West 86th Street, in Indianapolis, Indiana. The contaminated oil is considered regulated for disposal as PCB waste since some of the oil may have come in contact with a shipment received by ESI found to contain PCBs at a concentration greater than 50 ppm.

This Approval includes the terms and conditions in this letter, the conditions described in Systech's Resource Conservation and Recovery Act (RCRA) Part B operating permit for storing and blending hazardous waste, and the conditions under Lafarge's Clean Air Act (CAA) Title V permit for burning hazardous waste in the cement kilns, both of which were issued by the Ohio Environmental Protection Agency (OEPA).

In granting this Approval, we considered the following information:

1. The federal PCB regulations, set forth at 40 C.F.R. § 761.20(e), which allow waste oil with less than 50 ppm PCBs to be burned as a fuel in industrial furnaces and boilers.

2. Systech's and Lafarge's request for a TSCA coordinated approval to store, blend and burn the contaminated oil currently stored at ESI.

3. Systech's notification of a PCB activity as a PCB storer dated October 17, 2007.

4. Lafarge's notification of a PCB activity as a disposer dated October 29, 2007.

5. Systech's RCRA Part B operating permit issued by the OEPA on August 8, 2003 and expiring on August 8, 2013.

6. Lafarge's final CAA Title V Chapter 3745-77 permit issued by the OEPA on June 18, 2003 and expiring on July 9, 2008.

7. Lafarge's demonstration that the hydrocarbon emissions do not exceed the hydrocarbon emission standard established during the August 1998 trial burn of cement kiln #1. An emission re-certification of compliance test was completed for kiln #2 in 1995.

8. Systech is a subsidiary of Lafarge, they are located immediately next to each other, and Systech routinely stores and directly feeds fuel oil for, and to, Lafarge.

9. The federal PCB regulations at 40 C.F.R. § 761.20(c)(2)(iii) which allow processing, diluting or otherwise blending of waste prior to being introduced into a disposal unit in order to meet PCB concentration requirements if it is done in accordance with a TSCA PCB disposal approval.

This Approval is effective immediately and is granted with the following terms and conditions:

1. Systech must follow the procedures described in the waste analysis plan and the terms and conditions of its existing RCRA Part B operating permit issued by the OEPA. Any material that has a PCB concentration of equal to or greater than 50 ppm must be rejected and returned to ESI.

2. Systech must store the contaminated oil from ESI in the following tanks:

   a. OL-4,
   b. OL-7, and/or
   c. OL-8,

   as designated in its application for a TSCA approval dated September 25, 2007.

3. Systech must blend the contaminated oil from ESI pursuant to and as described in Lafarge's CAA Title V permit Condition II.2.: Operational restriction to meet the

specifications of the blended waste-derived fuel to be burned in Lafarge's kilns #1 and #2.

4. Systech must sample and analyze for PCBs any blended fuel fed to Lafarge's kilns during start up to assure compliance with Condition 5 of this Approval.

5. Lafarge may feed the contaminated oil during start up of the kilns as long as the blended fuel contains less than 2 ppm PCBs.

6. Lafarge may burn the blended contaminated oil in kilns #1 and #2 following the procedure and operational restriction specified in its CAA Title V permit.

7. Lafarge must maintain all records specified in its CAA Title V permit as well as those records required under 40 C.F.R. § 761.180(b). In addition, Lafarge and Systech must maintain the analytical results of the sampling required by Condition 4 of this Approval for three years.

8. Systech must decontaminate its tanks and piping system by circulating 15,000 gallons (ten percent of its largest tank volume) of blended fuel containing less than 2 ppm PCBs. The blended fuel must then be burned in kilns #1 and #2.

9. Lafarge must notify the Chief of the Toxics Section, at the above letterhead address, of the progress in burning the contaminated oil each month this Approval is in effect.

10. This Approval expires when the 1.5 million gallons of oil currently stored in ESI and the additional waste oil used for decontamination have been burned.

This Approval is granted in accordance with the federal PCB regulations at 40 C.F.R. § 761.77. Pursuant to 40 C.F.R. § 761.77, a TSCA coordinated approval may be issued to dispose PCB waste if an owner or operator of a facility has a waste management permit exercising control over the PCB wastes which was issued by a state program approved by the EPA and is no less stringent than the federal PCB regulations. For the purpose of this Approval and in accordance with 40 C.F.R. § 761.77(b)(3), the requirement to comply with the PCB incinerator standards at 40 C.F.R. § 761.70 is being waived, and instead, the terms and conditions in this letter are being applied. The terms and conditions in this letter are based on the requirements for burners of used oil for energy recovery at 40 C.F.R. § 761.20(e).

Lafarge and Systech are responsible for assuring that any person conducting storage or disposal activities under this Approval takes necessary measures to protect against the direct release of PCBs to the environment. Additionally, Lafarge and Systech are responsible for assuring that persons participating in the storage and disposal activities under this Approval wear protective clothing, or use equipment to protect against dermal or inhalation of PCBs, or materials containing PCBs.

This Approval is effective as of the date of this letter. Any departure from the conditions of this Approval must receive prior written authorization from EPA. This Approval may be suspended or revoked at any time if EPA has reason to believe that the continued burning of the oil presents an unreasonable risk of injury to human health and the environment. This Approval does not relieve Lafarge or Systech from complying with all other applicable federal, state and local regulatory requirements and does not preclude EPA from initiating any enforcement action, including an action seeking civil penalties, for any violation.

If you have any questions, please contact Tony Martig, of my staff, at (312) 353-2291.

Sincerely,

Margaret M. Guerriero, Director
Land and Chemicals Division

cc: J. Mensinger, Systech
B. Fogle, Lafarge
A. Heller, OEPA
M. Smidi, OEPA
G. Ritchotte, Indiana Department of Environmental Management
T. Gawlik, ESI

July 7, 2010

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Mr. Tony Martig, Chief – Toxics Section
United States Environmental Protection Agency Region 5
77 West Jackson Boulevard
Mail Code: LC-8J
Chicago, IL 60604-3507

Re: Revised Tank 51 Restoration Work Plan Application
ESI Environmental, Inc. – Indianapolis, Indiana

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Dear Mr. Martig:

As previously reported, an incident at the ESI Environmental, Inc., (ESI) facility in Indianapolis, Indiana, resulted in the accumulation of polychlorinated biphenyl (PCB)-containing oils in tanks and piping at the facility. WSP Environment & Energy has been working to remove PCB-containing oils and decontaminate piping and frac tanks. The majority of this work has been successfully completed; however, as discussed below, the decontamination of one of the larger tanks, Tank 51, and the associated piping remains to be completed. The effort and expense incurred to date has been extensive, involving over 110 days of onsite activities and considerable other planning activities. WSP has prepared this application for a work plan to restore Tank 51 in a cost effective and pragmatic manner that is consistent with applicable laws and regulations. This letter also addresses issues relating to the West Million and East Million tanks located at ESI's facility.

Incident Background

The ESI facility operates a commercial used oil processing facility in Indianapolis, Indiana. The facility consists of numerous tanks, sumps, vessels, and pipes used to process used oil and oily water. The oil process diagram is shown on Figure 1 and the plant layout is shown on Figure 2. WSP understands that the facility operates under an analysis plan developed pursuant to 329 IAC 13-7-6 or 40 Code of Federal Regulations (CFR) 279.55, and that before July 18, 2007, ESI relied on generator and transporter knowledge and certification that incoming loads do not contain PCBs. Additionally, ESI regularly samples and analyzes its product oil to confirm no PCBs and samples and analyzes each incoming load for purposes of the "rebuttable presumption" under 40 CFR 279.53 and retains the samples.

On July 18, 2007, ESI was informed by a customer that it had discovered approximately 28 milligrams per kilogram (mg/kg) of PCBs in a used oil shipment from the ESI facility. The customer returned the shipment to ESI, and the returned shipment of the oil was placed in a segregated holding tank. Upon notification, ESI took actions to detect, manage, and contain the material by ceasing to process oil and contacting its customers to recall the oil that may have had PCBs. ESI collected samples for PCB analyses from each of the product storage frac tanks and other process tanks. ESI also systematically analyzed the archived samples of the incoming loads until they identified the loads that contained PCBs. ESI discovered that

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detectable PCBs were present in four loads of oily water from one generator/ transporter received on July 6, 2007 (two loads), July 10 (one load), and July 11 (one load).

As indicated in ESI's letter to you, dated August 9, 2007, decontamination of ESI's equipment began immediately after receipt of the contaminated used oil, followed by more intensive decontamination with kerosene beginning on August 1, 2007, pursuant to the self-implementation regulations set forth in 40 CFR 761.79. As described in follow-up correspondence to EPA, ESI completed three flushes using approximately 2,000 gallons of kerosene per flush. The recovered kerosene was transferred to Tank 51 (also referred to as "L" on Figure 1). Tank 51 is a 40-foot high tank with a diameter of 60 feet.

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As described below, the materials conveyed to Tank 51 during ESI's response to the PCB contamination were limited to pumpable materials, which consisted of the liquids and suspended solids that could be pumped through existing and temporary lines. This type of material typically exists in used oil at recycling facilities. The decontamination process that took place at ESI's facility in response to the the PCB contamination is summarized in great detail in an August 23, 2007 email to the EPA and IDEM. According to information in this email and additional information obtained by ESI from current and former employees who were intimately involved in ESI's decontamination activities from July 18, 2007 through August 14, 2007, the materials that were pumped to Tank 51 included all pumpable materials contained in An undated document prepared by ESI and presented to the EPA and IDEM[1] described the decontamination activities in great detail. According to the document, solids from the decontamination of process tanks were placed in frac tanks 529A and 536A. No solids or sludge from the tanks and equipment, identified in the August 23, 2007 email including oil, decontamination solvent, and other pumpable materials, such as suspended solids. The materials that could not be pumped to Tank 51 were placed in frac tanks 529A and 536A. Recovered centrifuge solids (a.k.a. point "H" on Figure 1) were stored in a 3,000-gallon tank (referred to in this plan as the "centrifuge solids tank"). The solids from frac tanks 529A, 536A, and the centrifuge solids tank were disposed of offsite in accordance with applicable TSCA regulations. In addition, WSP's activities related to Tank 51, conducted from July 2008 to October 2009, were limited to removing materials out of the tank, therefore, no materials from other areas of the facilityprocess were pumped or transferred to Tank 51 during WSP's decontamination activities. **In summary, at no point during ESI's or WSP's decontamination activities were solids remaining in any tanks or other vessels physically removed by scraping, shoveling, or other non-pumping activities and placed in Tank 51.**

Deleted: As discussed in previous correspondence to the EPA from ESI, PCB-containing material was isolated in frac tanks 1, 2, 3, 4, 5, 9, 529A, 536A, Tank 43, Tank 44, Tank 51, and the centrifuge solids tank.

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In addition, samples of oil from frac tanks 43 and 44 that were collected by ESI on July 6, 2007, contained 13.28 ppm and 6.76 ppm of PCBs, respectively (Table 1). Subsequent to this sampling, these tanks were flushed and the pumpable liquids removed by ESI; however, ESI did not remove the sludges from the bottom of these tanks. After the liquids were removed, WSP collected a sludge sample from each of these tanks on March 12, 2008; neither sludge sample contained detectable PCBs at reporting limits of 2.0 and 20 ppm.[2] WSP does not believe any additional decontamination of these tanks is warranted because the sludge samples did not exhibit detectable PCBs.

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Starting in July 2008, WSP began the removal and transport of oil containing PCBs greater than 50 parts per million (ppm) to the Veolia Environmental Services (Veolia) facility in Port Arthur,

[1] August 23, 2007 electronic mail from Curt DeVoe of Plews Shadley Racher & Braun LLP to Priscilla Foncesca of the EPA and George Richotte of the IDEM..

[2] The sludge samples were sent to a second laboratory after the first laboratory was unable to achieve an acceptable detection limit. The first laboratory had a PCB reporting limit of 20 ppm, while the second had a reporting limit of 2.0 ppm.

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Texas, and oil containing PCBs less than 50 ppm to the LaFarge North America/Systech Environmental Corporation (Systech) facility in Paulding, Ohio. The Systech facility was approved by the EPA to receive oil containing less than 50 ppm PCBs from the ESI facility in a letter, dated April 25, 2008 (Enclosure A). Approximately 41,000 gallons of oil containing PCBs greater than 50 ppm from frac tanks 1, 2, and 9 were sent to Veolia for thermal destruction, and approximately 69,000 gallons of oil containing PCBs less than 50 ppm from frac tanks 3, 4, 5, 529A, and 536A were shipped to Systech for thermal destruction. The removal of oil from frac tanks 1, 2, 3, 4, 5, 9, 529A, and 536A has been completed.

The cleaning of frac tanks has also been completed. The frac tanks were cleaned and then sampled for PCBs in accordance with 40 CFR 761.300 and 40 CFR 761.272. The analytical results did not detect PCBs, and the rented frac tanks (1, 2, 3, 4, 5, 529A, and 536A) were returned to the tank rental company. Frac tank 9, which is owned by ESI, was returned to service at the facility. No non-pumpable materialsNo solids or sludges generated during the removal and disposal of oil or during the cleaning of the frac tanks were was pumped or transferred into Tank 51.

The centrifuge solids tank was also cleaned. Solids were removed, placed in vacuum boxes and shipped to Veolia for disposal. The centrifuge solids tank was then cleaned and sampled in accordance with 40 CFR 761.300 and 40 CFR 761.272. The analytical results did not detect any PCBs. This tank, which was owned by ESI, was also returned to service.

Liquids used to clean frac tanks 1, 2, 9 and the centrifuge solids tank were shipped in bulk or drummed and sent to Veolia in Port Arthur, Texas, or Clean Harbors in Deer Park, Texas for disposal. Liquids used to clean frac tanks 3, 4, 5, 529A, and 536A were shipped in bulk to Systech for disposal.

The West Million Tank

The West Million Tank (referred to as "C" on Figure 1) was impacted by PCBs by the incoming loads received during the period that the facility was operating from July 6 through 11, 2007. The decontamination of the West Million Tank and the likely effect of the water barrier between the oil and solids layers in the West Million Tank were described in ESI's previous correspondence to EPA. Prior to receiving notice of the contaminated loads, ESI continued to operate its facility and ultimately processed approximately 200,000 gallons per day of PCB-free oil through its facility between receipt of the contaminated oil and receipt of notice of the contamination on July 18, 2007. The oil in ESI's processes is an ideal solvent for PCBs because PCBs are highly soluble in that oil. Running oil through the ESI system, therefore, effectively and efficiently removed residual PCBs from the system. The oil acted as a solvent during these 7 days of operation and effectively resulted in flushing the system more than three times as required by the self-implementing decontamination procedures. Thus, sufficient volume passed through the West Million Tank to satisfy the requirements of the self-implementing standard (40 CFR 761.61 (a)). As described above, ESI decontaminated the rest of the process and the overall decontamination steps taken by ESI were approved by the EPA in a September 6, 2007 email from you to Tom Gawlik of ESI. In the email, you agreed that "flushing/decontamination of the process tanks and equipment conducted from July 18 - August 14, 2007 and the supporting PCB test results are acceptable." A copy of the September 6, 2007 email has been attached to this Plan. Therefore, it appears, based upon the above and the attached, that the EPA does not require any further decontamination activities for the West Million Tank. Worth noting is that no PCBs have been detected in the product oil processed through the West Million Tank since ESI completed the self-implementing decontamination procedures described in ESI's August 2007 communications to EPA. In addition, two sludge samples collected from the West Million Tank by ESI on August 8, 2007, one in the front of the

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process and one at the rear, did not contain detectable PCBs. **In light of the above and the EPA's prior authorization for ESI to utilize and process used-oil through the West Million Tank, we ask that you please confirm our understanding that no further decontamination procedures need to be taken with respect to the West Million Tank.**

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The East Million Tank

The East Million Tank is adjacent to the West Million Tank; the two tanks are reportedly separated by a weir. According to ESI, the East Million Tank receives liquids from the West Million Tank during storm events of sufficient intensity – water collects in the sump on the south side of the West Million Tank and backs up into the West Million, causing liquid to overtop the weir and enter the East Million Tank. Based on discussions with ESI personnel during the March 2008 sampling event, there were no storm events of sufficient intensity during the period of operation after the loads containing PCBs were received and the facility was shut down for decontamination (July 6, 2007 to July 18, 2007).

The East Million Tank was sampled by WSP on March 18, 2008. Two samples were collected: one oil sample from the oil layer and one sludge sample from 1 to 2 feet below the top of the sludge. As presented in Table 2, neither sample contained detectable PCBs at reporting limits of 2.0 and 20 ppm.[3] **Based on these sampling results and the fact that there is no evidence that the content of the East Million Tank came in contact with the PCB-impacted oil, we ask that you please confirm our understanding that no action needs to be taken with respect to the East Million Tank.**

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Tank 51

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Starting in October 2008, oil containing PCBs less than 50 ppm contained in Tank 51 was transported to Systech for thermal destruction. The process involved mixing the tank to ensure that the loads did not contain too high a water content, pumping the oil into a secondary tank used for mixing, and then loading a tanker from the secondary tank. For a short period of time, the mixing process involved pumping material from the "zero" or bottom valve up to the oil layer in the Tank.

Systech was limited in the number of loads of this oil it could receive each day (3 loads maximum per day depending on the facility operations). Approximately 660,000 gallons of oil from Tank 51 was transported to Systech between October and December 2008: the transportation of oil was shut down for winter in December 2008. Oil removal from Tank 51 and disposal at Systech was completed in August 2009; no readily pumpable material remains in Tank 51. A small amount of liquid trapped in small depressions located on top of the solids remains in Tank 51. Tank 51 currently contains approximately 250,000 to 275,000 gallons of sludge/solids.

Table 1 presents the results of PCB analysis conducted on two oil samples and one solids sample collected from Tank 51 in March 2008. The results indicate that the oil samples averaged 7.1 ppm PCBs and that the solids sample contained an estimated concentration that was below the reporting limit. In addition, each load received by Systech was tested for PCBs, a total of 113 samples. The average PCB concentration for material loaded from Tank 51 was 5.7 ppm. These data suggest that, while there are PCBs contained in the liquid in Tank 51, the concentrations detected are not excessive and are well below 50 ppm PCBs.

[3] The oil and sludge samples were sent to a second laboratory after the first laboratory was unable to achieve an acceptable detection limit. The first laboratory had a PCB reporting limit of 20 ppm, while the second had a reporting limit of 2.0 ppm.

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Tank 51 Restoration Application

Objective

As we discussed in our July 15, 2009 meeting, WSP is working to develop a cost effective, pragmatic strategy to restore Tank 51 to enable the tank to be brought back into service. It is believed that Tank 51 contained an unknown fraction of the layer of solids prior to the July 2007 PCB contamination incident and, to the extent that it can be demonstrated that the solids remaining in the tank do not contain PCBs above detection levels, the strategy is to allow a portion of the solids to remain in the tank. The strategy describes, in general terms, the activities associated with restoring Tank 51 in accordance with the applicable regulations.

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The tank will be decontaminated and verified, as described in the following plan. This section presents the regulatory framework, and then presents a proposed alternative to the self-implementing remediation standards.

Regulatory Framework and Discussion

Each of the following TSCA regulations may be applicable to the restoration of Tank 51:

- 40 CFR 761.79: Decontamination standards and procedures
- 40 CFR 761.61: PCB remediation waste
- 40 CFR 761.120: Subpart G – PCB cleanup

Each of these sections contain provisions for alternative decontamination, as described below:

As stated in 40 CFR 761.79 (h), the decontamination standards and procedures include a process for alternative decontamination methods:

> *"Alternative decontamination or sampling approval.* (1) Any person wishing to decontaminate material as described in paragraph (a) of this section in a manner other than as described in paragraph (b) of this section must apply in writing to the EPA Regional Administrator in the Region where the activity will take place, for decontamination occurring in a single Region; … Each application must describe the material to be decontaminated and the proposed decontamination method, and must demonstrate that the proposed method is capable of decontaminating the material to the applicable level set out in paragraphs (b)(1) through (b)(4) of this section."

The alternative decontamination method is presented below.

As stated in 40 CFR 761.61[4], the self-implementing remediation standards the EPA developed are for a general, moderately sized site, and the procedures may be less practical for a larger or environmentally diverse site, as stated in the self-implementing standard citation in 40 CFR 761.61(a):

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[4] Note: page 65 of the January 2009 version of EPA's Question and Answer Manual, located at http://www.epa.gov/waste/hazard/tsd/pcbs/pubs/qacombined.pdf, provides an interpretation of PCB remediation waste. Although the "pipeline liquid" referred to is water, it is reasonable to presume that the statement would also apply to PCB-contaminated oil.

3 Q: How must a company treat water that comes into contact with and is therefore contaminated with PCBs?

A: If the liquid is just water, not associated with a pipeline, such as runoff from a contaminated transformer pad, then it should be treated in accordance with the disposal requirements at §761.60 for PCB liquids, or with the decontamination standards for water containing PCBs at §761.79(b)(1) . If the water is liquid removed from a pipeline (i.e. pipeline liquids), then it should be treated as PCB remediation waste in accordance with §761.61(a)(5)(iv). A technical correction will be made to §761.30(i)(5)(i). The phrase "in accordance with §761.60(a)" will be replaced with the phrase "in accordance with 761.61(a)(5)(iv)".

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> "EPA designed the self-implementing procedure for a general, moderately-sized site where there should be low residual impact from remedial activities. The procedure may be less practical for larger or environmentally diverse sites. For these other sites, the self-implementing procedure still applies, but an EPA Regional Administrator may authorize more practical procedures through paragraph (c) of this section."

As stated in 40 CFR 761.61 (c)(2):

> "EPA will issue a written decision on each application for a risk-based method for PCB remediation wastes. EPA will approve such an application if it finds that the method will not pose an unreasonable risk of injury to health or the environment."

Additionally, EPA has flexibility in allowing less stringent alternative requirements under 40 CFR 761.120(c) if the responsible party demonstrates one or more of the following:

- cleanup to the prescribed numerical standards is unwarranted because of risk-mitigating factors;
- implementing the policy is impractical at the particular site; or
- implementing the policy is cost-prohibitive, due to the site-specific characteristics.

The self-implementing procedure is impractical for Tank 51 for the following reasons:

- An unknown fraction of the layer of solids and unpumpable material at the bottom of Tank 51 was in place before the PCB-containing materials were introduced into the tank, and an unknown quantity of solids was present in the PCB-containing oil introduced into the tank. Some solids that were in the materials placed in Tank 51 have likely settled due to the passage of time. WSP believes the pre-existing solids did not mix appreciably with the oil layer above because the solids are denser than the oil. Some mixing may have occurred when the contents in Tank 51 were mixed to provide a more consistent product for shipment to Systech.

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- Removing all the sludge from Tank 51 could require openings to be made in the tank, which would then require extensive repairs. When pumping solids from the tank, WSP and its contractor lowered the pump, which weighed approximately 120 pounds, onto the top of the sludge layer. The sludge supported the weight of the pump. This assertion is demonstrated by the results of samples WSP collected by pushing a core sampler into the solids layer, which did not detect PCBs above the reporting limit (see Table 1).
- If the solids must be removed, they may need to be managed as a TSCA waste, unless EPA agrees that the solids are not TSCA wastes or grants a variance from TSCA disposal standards for the solids, or if the solids contain no detectable PCBs. The closest facility that can accept TSCA-regulated solids with any amount of free liquids is the Veolia facility in Port Arthur, Texas. (Systech will not accept this material due to the high solids and low BTU content.) Assuming 2,400 gallons of solids per load, this would require approximately 115 loads and 260,000 miles of truck travel.
- Cleaning the tank and collecting wipe samples every 10 square meters would require that workers enter the tank for extended periods of time using confined space entry procedures. Furthermore, the cost to remove the sludge, manage it as a TSCA waste, and fully comply with 40 CFR 761.61 (a) would be prohibitive (as much as $4 to $5 million).

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Restoration Implementation

For the reasons articulated above, WSP proposes an alternate restoration process that is based on the regulations in 40 CFR 761, as discussed below. We believe this proposed process is protective of human health and the environment, meets the requirements of both 40 CFR 761.61(c) and 40 CFR 761.79(h), and can be implemented in a manner to minimize the risk to workers.

As currently designed, the proposed Tank 51 restoration will consist of the following:

1. **Remove ridges on the top of the unpumpable solids:** The existing manway will be used to access the top of the unpumpable solids. A high pressure sprayer equipped with a camera and lights will be inserted in the existing manway and then will be used to smooth out the high spots to allow oil to flow towards the manway. Contractor personnel will not enter the tank, unless absolutely necessary to smooth out the high spots.
2. **Triple Rinse the interior surfaces of Tank 51:** The exposed surfaces inin the tank will be triple rinsed with a petroleum-based solvent, such as diesel fuel, using a nozzle powerful enough to reach the other side of the tank from the existing manway. Contractor personnel will spray from the manway using the remote sprayer. The triple rinse will consist of spraying the tank walls, any components, and the solids surface with the rinse solvent. The rinse volume will be 15,000 gallons, which is less than 10 percent of the tank volume (846,000 gallons). Therefore, each rinse will consist of reuse of the 15,000 gallons 6 times.
3. **Collect and test the rinse material**: The rinse material will be pumped out of Tank 51 using the pumping system used to remove the oil from tank into a mixing frac tank for reuse. After the 15,000 gallons have been used 6 times, a representative sample will be collected for testing. A representative sample will be collected by running the mixers in the mix tank for 30 minutes and then collecting a sample from the mixing liquid through the manway in the middle of the mixing tank at a depth of one-foot below the liquid surface. triple rinse will consist of spraying the tank walls any components, and the surface of the sludge with the rinse solvent. The rinse volume will be 15,000 gallons, which is less than 10 percent of the tank volume (846,000 gallons). Therefore each rinse will consist of reuse of the 15,000 gallons 6 times. **and test rinse material**rinse material rinse materialpumped into a mixing frac tank for reuseAfter the 15,000 gallons have been used 6 times, a representative sample will be collected for testing. A representative sample will be collected by running the mixers in the mix tank for 30 minutes and then collecting a sample from the mixing liquid at a depth of one-foot below the liquid surface. The sample will be tested for percent solids using American Society for Testing and Materials (ASTM) method D1798; if the solvent-oil mixture is greater than 0.5 percent solids (by weight), then the solid and liquid sample phases will be separated in accordance with 40 CFR 761.269 and tested for PCBs in accordance with 40 CFR 761.272. If the first rinse is greater than 50 ppm PCBs, the rinse material will be disposed of as described below and new rinse material will be used. If the rinse material is less than 50 ppm, it will be reused in the second rinse.
4. **Rinses 2 and 3**: The,The second rinse will be conducted in a manner similar to the first rinse. After the second rinse is completed, the rinse material will be collected and tested as described in step 3. If the results from testing the second rinse indicate a PCB concentration greater than 2 ppm, the rinse material will be disposed of as described below and new . If the rinse material will be used. If the results from testing the second rinse indicate a PCB concentration is less than 2 ppm, it will be reused in the third rinse. The third rinse will be conducted in a manner similar to the other two rinses. After the third rinse is completed, the rinse material will be collected and tested as described in

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Deleted: cleaned with a PCB-free
Deleted: The sidewall cleaning will be done consistently throughout the tank. After the sidewalls have been cleaned, wipe samples will be collected and analyzed as presented below. Wipe samples will be collected before the unpumpable solids have been covered with solvent, as described in Step 4. If wipe sampling indicates that PCBs remain in the tank above the wipe sampling standard of 10µg/100 cm^2, then the sidewalls of the entire tank will be re-sprayed and retested.
Deleted: Wipe sampling will be conducted by lowering contractor personnel into the tank with equipment designed for this purpose. This task, and all the other work discussed in this application, will be conducted in compliance with applicable federal Occupational Safety and Health Administration and Indiana Department of Labor regulations. Wipe samples will be collected using an apparatus … [1]
Deleted: ¶ <#>Spray the unpumpable sc … [2]
Deleted: the solvent-oil mixture
Deleted: : The solvent-oil
Deleted: mixture will then be pumped out of Tank 51 using th … [3]
Deleted: will then be transported to Systech for disposal
Deleted: .
Deleted: A sample from each 5,000-gallon load will be collected for … [4]
Deleted:
Deleted: Repeat steps 4 through 5
Deleted: unpumpable solids will be covered as described in step 4 … [5]

Deleted: , November 24, 2009¶

step 3. If the results from testing the third rinse indicate a PCB concentration less than 2 ppm, the triple rinse will be considered complete. If the results from testing the third rinse indicate a PCB concentration greater than 2 ppm, the rinse material will be disposed of as described below, and another rinse will be completed. Additional rinses and testing will be completed until the rinse material after a completed rinse cycle is less than 2 ppm PCBs. A representative sample will be collected from the

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5. **Collect unpumpable solid surface samples**: Samples will be collected from the surface of the unpumpable solids. Five samples will be collected from each of the four tank quadrants using threaded PVC piping angled to collect the sample. The sampler will be "pushed" by mechanical means if necessary to collect a sample from 6 to 8 inches. Samples will be collected randomly within the quadrant. Each sample will collected using dedicated piping and sampler. The samples will be analyzed for PCBs in accordance with 40 CFR 761.272. If the surface samples detect PCBs above 1 ppm, then another rinse removing 6 to 8 inches of material in the area above the cleanup standard using new rinse material will be completed, and sludge samples will be collected as described above. If the rinsing process can not remove 6 to 8 inches of sludge, then other methods to remove the sludge will be employed. If solids testing detects PCBs above 1 ppm, then the process of rinsing and sampling (or material removal by other means) will be repeated until all samples are 1 ppm or below.

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Rinse Material Disposal

WSP proposes to transport and dispose of the rinse material at Systech, if the rinse material PCB concentration is below 50 ppm. As you are aware, the EPA has approved, with a TSCA Coordinated Approval dated April 25, 2008, the disposal of "contaminated oil" from ESI at Systech. The approval letter is enclosed as Enclosure A. Under item #10 in the terms and conditions, the approval expires "when 1.5 million gallons of oil currently stored at ESI and the additional waste oil for decontamination have been burned". WSP believes that the TSCA Coordinated Approval has not expired since rinse material to be used in the triple rinsing of Tank 51 is "additional waste oil for decontamination".

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If the rinse material PCB concentration is above 50 ppm PCBs, the rinse material will be shipped and disposed of at either Veolia or Clean Harbors.

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Summary

WSP believes that the above approach meets the intent of the TSCA regulations, while protecting worker safety and somewhat minimizing the expense. The approach also will allow Tank 51 to be placed back on-line considerably faster than if a generic approach is taken, which will be logistically very difficult to implement.

If you have any questions, please contact John Simon at 703-709-6500 or Dave McLay at 303-850-9200. We look forward to working with you and your colleagues to develop a practical solution to managing the final portions of this project.

Sincerely yours,

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John A. Simon
Executive Vice President

David S. McLay, P.E.
Technical Manager

Deleted: , November 24, 2009¶

JAS:dsm

Enclosure

cc/encl: Mr. Bradley Grahams, United States Environmental Protection Agency
Mr. George Ritchotte, Indiana Department of Environmental Management
Michael T. Scanlon, Esquire, Barnes & Thornburg LLP
Christopher Ferragamo, Esquire, Jackson & Campbell, P.C.
Mr. Al Nesheiwat, Chartis, Inc.
Mr. Glenn Serrano, Chartis, Inc.

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Tables

Figures

Enclosure A
Systech/LaFarge TSCA Coordinated Approval Letter

Page 7: [1] Deleted Dave McLay 6/14/2010 4:13:00 PM

Wipe sampling will be conducted by lowering contractor personnel into the tank with equipment designed for this purpose. This task, and all the other work discussed in this application, will be conducted in compliance with applicable federal Occupational Safety and Health Administration and Indiana Department of Labor regulations. Wipe samples will be collected using an apparatus designed to collect 100 square centimeter samples at various distances away from the manway, up to 10 feet. Twenty-seven wipe samples will be collected at random locations up to 10 feet from the contractor personnel, starting at four feet from the top of the tank (the original top of liquid in the tank) to the top of the unpumpable solids. The wipe sample apparatus will collect a 100 cm^2 sample for testing. The wipe samples will be analyzed in accordance with 40 CFR 761.272.

Page 7: [2] Deleted Dave McLay 7/7/2010 12:29:00 PM

Spray the unpumpable solids with a petroleum-based solvent: The unpumpable solids remaining in Tank 51 will be sprayed with a petroleum-based solvent, starting at the high end. The unpumpable solids will be sprayed completely throughout the tank; the spray volume will be approximately 15,000 gallons.

Collect

Page 7: [3] Deleted Dave McLay 6/14/2010 4:21:00 PM

mixture will then be pumped out of Tank 51 using the pumping system used to remove the oil from tank. The solvent-oil mixture

Page 7: [4] Deleted Dave McLay 6/14/2010 4:24:00 PM

A sample from each 5,000-gallon load will be collected for sampling. Each

Page 7: [5] Deleted Dave McLay 6/14/2010 4:48:00 PM

unpumpable solids will be covered as described in step 4 and collected, tested, and disposed as described in step 5. This process will be repeated until the solvent-oil mixture contains no PCBs

Thomas.Moore@lafarge-na.com

To

11/20/2007 03:28 PM

Subject Re: PCB update

History: This message has been replied to.

Ms. Fonseca:

Systech is a owned by Lafarge. Systech holds a hazardous waste permit in its own name. Systech receives, stores, and blends hazardous waste as well as used oil. Systech has two tank farms. One is for hazardous wastes and one for used oil. The two farms are not interconnected. The hazardous waste tank farm consists of six 25,000-30,000 gallon "blend" tanks and three 150,000 gallons "burn" tanks. The material that would be subject to this conditional approval will only be received in the hazardous waste tanks. Because these tanks hold hazardous waste, their operation is controlled by the hazardous waste regulations and permit conditions. These are the conditions that prohibit burning except when the kilns have achieved the necessary operational temperatures and have demonstrated a destruction and removal efficiency (DRE) of 99.99%. Lafarge also holds a hazardous waste permit in its name that allows them to burn hazardous waste as a fuel and some of these conditions are contained in this permit.

Lafarge also holds a Title V permit that contains additional conditions related to the burning of hazardous waste. These conditions are commonly referred to as the hazardous waste combuster MACT requirements. Systech is also covered by that same Title V permit. This is due to the Clean Air Act's definition of "facility" which precluded Systech from obtaining its own Title V air permit.

Operationally, Systech will receive this material and place it in the tanks. Once the material is blended and analyzed by Systech to demonstrate compliance with Lafarge's permit limitations, Lafarge "accepts" the material to be used as a fuel. Lafarge controls the actual burning in accordance with their permit and the operational needs of the kiln. Since Systech's tank farm is hard piped to the Lafarge kilns, we cannot operate independently. Therefore, it seemed logical that we submit the conditional approval request together which is why there are two signatures on the letter.

I hope this helps answer your questions. If not, please let me know.

Tom Moore

Thomas E. Moore
VP, Corporate Counsel
937.531.1079
937.671.8946 (cell)

fichiers joints sans les copier, divulguer ou conserver d'aucune facon.

Anton Martig /R5/USEPA/US
07/30/2007 12:00 PM

To "RITCHOTTE, GEORGE" <GRITCHOT@idem.IN.gov>
cc Priscilla Fonseca/R5/USEPA/US@EPA
bcc
Subject Re: ECI Cleanup plan

George,

This message responds to some of the questions on the ECI contamination and cleanup. This message may not address all the issues, but I think it addresses the main issues.

Material in Tanks

All the material in a tank or pipe system that came into contact with the original material or any material that was known or considered to by 50 ppm or greater, is considered a regulated PCB waste and must be disposed of as a regulated PCB waste, even if its current concentration is less than 50 ppm. This includes any material in the tank, including the residual bottoms at the bottom of the tank. The PCB regulations prohibit dilution unless it is specifically provided for in the regulations .

Decontamination of Tanks, Pipes, Pumps, ect.

The PCB regulations at 761.79(c)(1) provide self-implementing procedures for decontaminating containers, including bulk tanks. Its basically a triple rinse using a volume of 10 percent of the container capacity for each rines. If the rinse volume can not contact all of the container surfaces due to its design or operation, the container can be completely filled, filled to 100%. This, however, would have to be done three times, with each time satisfying the requirment for a single rinse cycle. In addition, any pipes or pumps connected to the tank can be covered by this rinse cycle as long as the rinse fluid also passes thru the pipe or pump. The rinse fulid can be reused as long as it is less than 50 ppm. If there are a series of tanks and pipes to be contaminated, the rins fluid can be reused as long as it is less than 50 ppm. To assure that this concentration is met, a sample could be collected after the volume of rinse fluid was passed through each affected tank and pipe as one rinse. This can be repeated for the second and third rinses.

Management of Decon. Fluids

The PCB regulations at 761.79(g)(3) provide for the management of hydrocarbon based rinse fluids. If the final rinse is 50 ppm or greater, it has to be disposed of as a PCB waste, and the decontamination must continue. For the final rinse fluids of less than 50 ppm, the fluid can be burned as a used oil under 761.20(e), (like an off-specification oil). If the final rinse fluids are less than 2 ppm, they can be considered decontaminated under 761.79(b)(2).

I hope this helps to begin addressing this issue and applying the PCB regulations to this case, and I apologize if any of it is too brief. Please call me if you have any questions or need additional information or help on any particular issue.

Tony 312-353-2291

"RITCHOTTE, GEORGE" <GRITCHOT@idem.IN.gov>

"RITCHOTTE, GEORGE" <GRITCHOT@idem.IN.gov>
07/26/2007 02:15 PM

To
Subject ECI Cleanup plan

Tony:

Have you by any chance had an opportunity to take a look at the ECI

(Indianapolis) cleanup plan for their used oil process system. Priscilla mentioned that you might be able to take a look at it and provide comments/approve their plan... The reason why I thought it needed some sort of approval (written or verbal) is that they are not planning on disposing of all of the original contaminated oils. They are both using the oils as decon solvent and instead of sending them off to a TSCA incinerator or high effiency boiler, they are going to send it to a 761.20(g) type facility...

They are in dire straights because of their inability to receive any additional liquids because they are out of space.. And I don't feel comfortable saying yes at this time because I don't want my/IDEM's decision to be viewed as less stringent...

Any assistance you can give would be greatly appreciated by both myself and ESI. I realize that you and your staffs time is pretty well already spoken for...

THANKS YOU
George Ritchotte

P.S: I am not in the office today, but I can be reached on my cell phone at 317-308-3123 if you have questions or would like to discuss this case...

THANK You...

Analytical Resources
809 Overstreet Ave.
Franklin, In 46131
Phone:(317)496-5095
Fax(317)738-4105

Certificate of Analysis

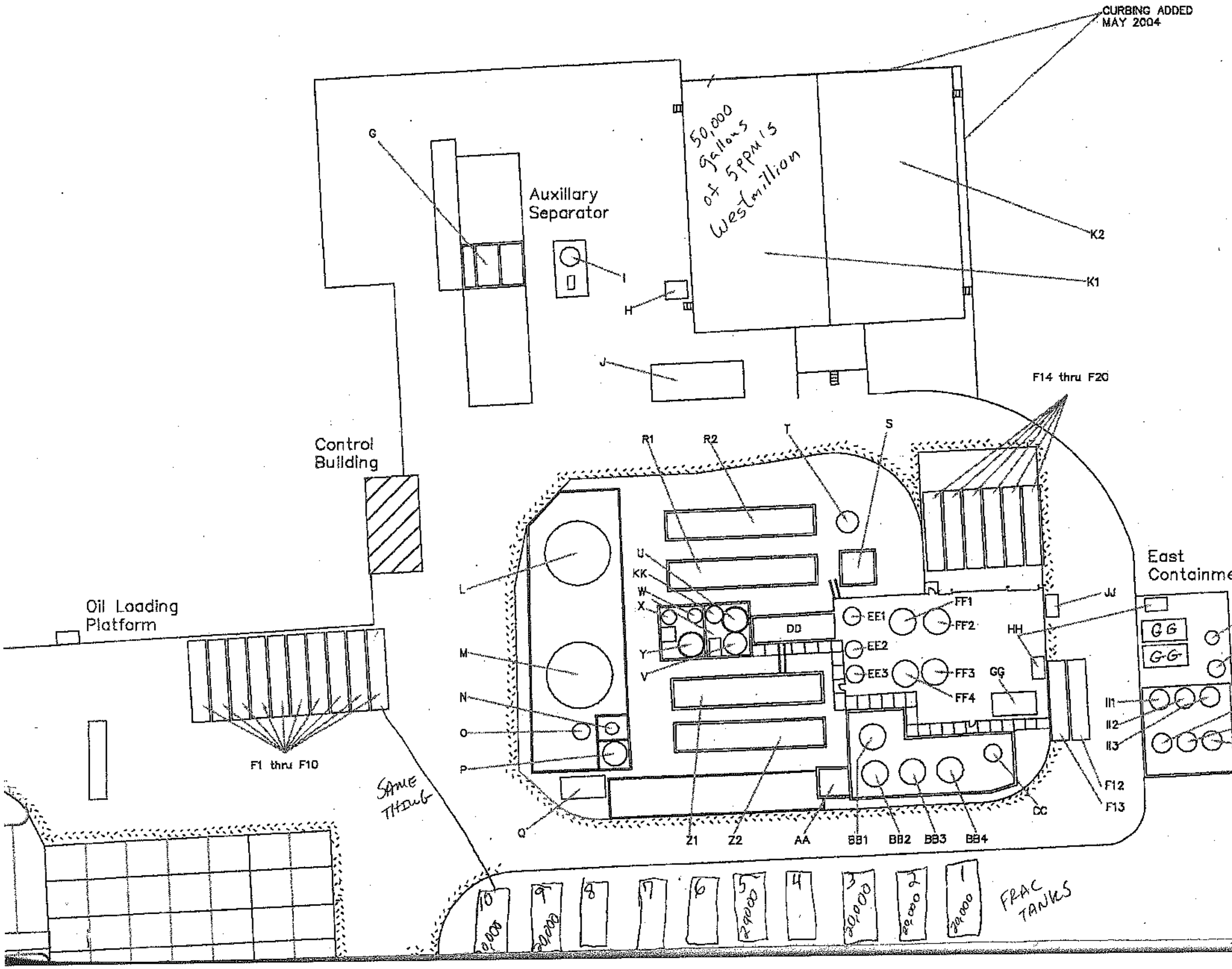
Date:07/19/07

Customer: **Ecological Systems, Inc.** **Date Received:07/18/07**

Matrix: Oil

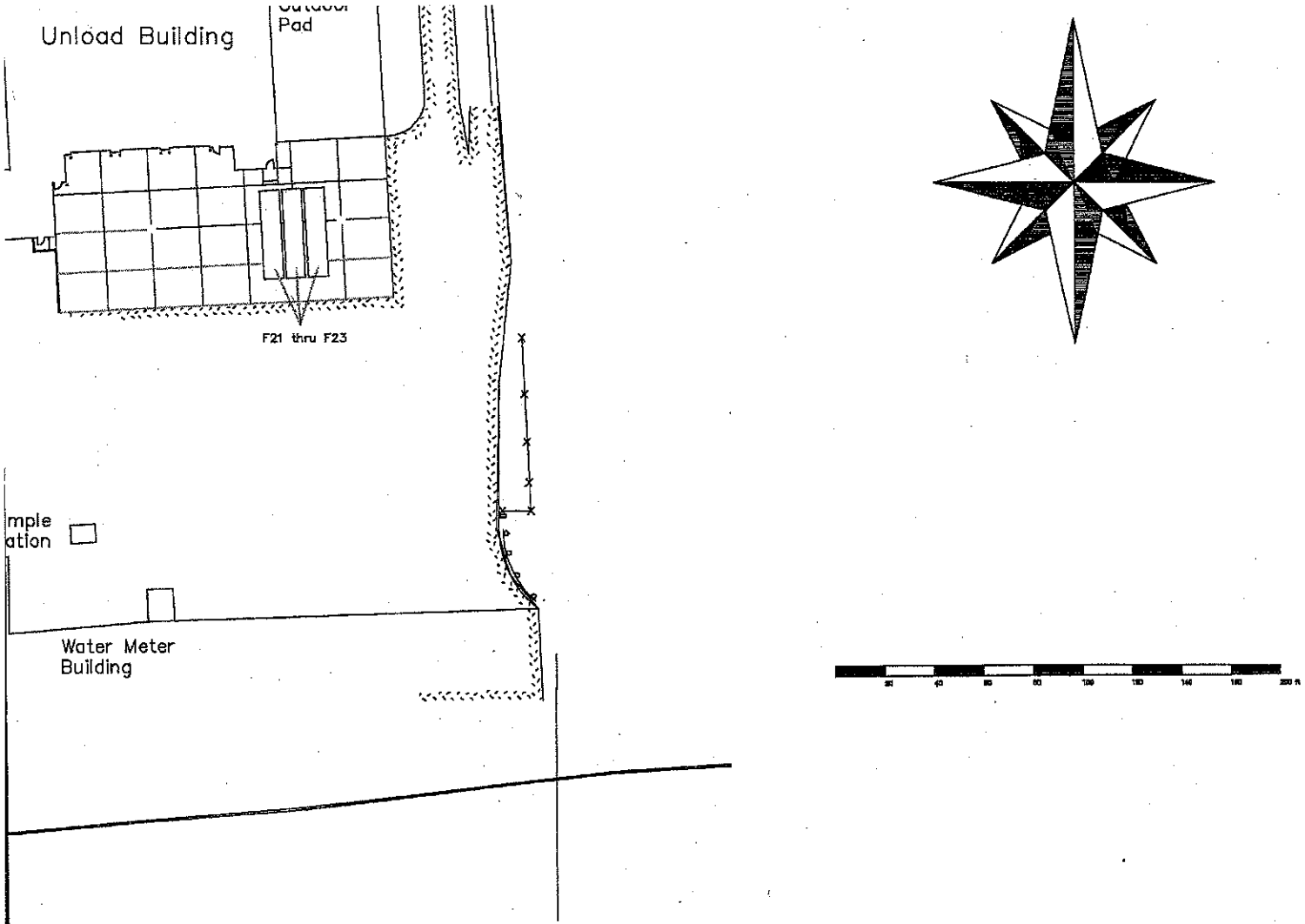
Parameter	Method	Detection Limit	Result(mg/kg)	Aroclor
PCB's				
Sample ID				
1	SW846-8082	2.0 ppm	34.28	1260
2	SW846-8082	2.0 ppm	32.32	1260
3	SW846-8082	2.0 ppm	30.07	1260
5	SW846-8082	2.0 ppm	21.41	1260
9	SW846-8082	2.0 ppm	58.81	1260
10	SW846-8082	2.0 ppm	20.49	1260
3108	SW846-8082	2.0 ppm	22.10	1260
3111	SW846-8082	2.0 ppm	33.28	1260
Tank 51	SW846-8082	2.0 ppm	21.99	1260
West Million	SW846-8082	2.0 ppm	5.40	1260

Lab Manager



ECOLOGICAL SYSTEMS, INC.

SYSTEMS, INC.®
FACILITIES
INDIANA



ECOLOGICA
NORTH
INDIANAPOLIS

DESIGNED BY:	JAW
DRAWN BY:	JAW
CHECKED BY:	JAW
DATE:	08/11/04

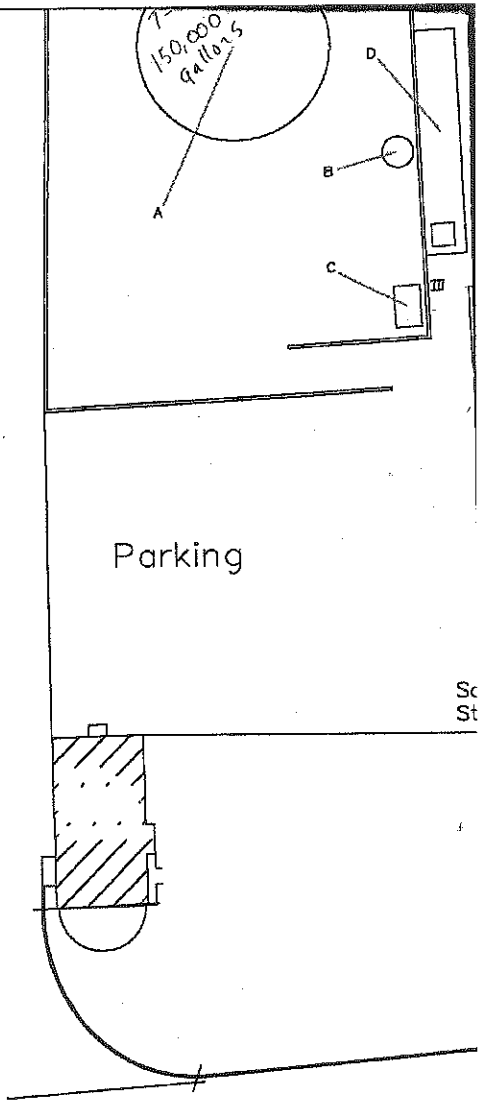
REVISIONS

10-15-04: item JJ added P modified
12-21-04: Equip ID no. column adde
01-10-05: scale bar, compass & li
06-16-07 Upgrade Tank-Equ

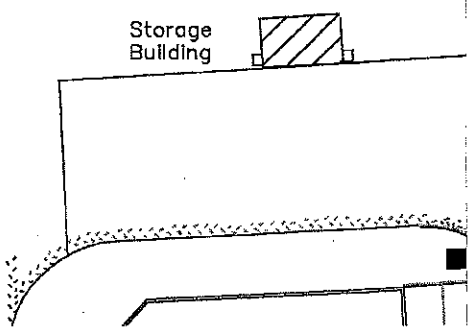
EQUIPMENT
AND_TANKAGE
LOCATIONS

G2.02

U	52TK33	OFF-SPEC CAUSTIC STORAGE	7,000 GALLON
V	52TK35	OFF-SPEC CAUSTIC STORAGE	10,000 GALLON
W	52TK37	VIRGIN ACID TANK	10,000 GALLON
X	52TK38	NOT IN USE	10,000 GALLON
Y	52TK39	OFF-SPEC ACID TANK	7,000 GALLON
Z	52SP02A / 52SP02B	DAF SEPARATORS	(2X) 30,000 GALLON
AA		OIL UNLOADING SUMP	4,000 GALLON
BB	55TK12 – 55TK15	CRACK TANK/ DEHY FEED TANK (TYPICAL OF 4)	(4X) 20,000 GALLON
CC	52TK04	VIRGIN ACID STORAGE TANK	10,000 GALLON
DD	OX PIT	OXIDATION PIT	30,000 GALLON
EE	53FL01A – 53FL01C	SAND FILTER (TYPICAL OF 3)	(3X) 2,000 GALLON
FF	53TK21 – 53TK24	SLUDGE TANK (TYPICAL OF 4)	(4X) 12,000 GALLON
GG	BOILER	BOILER AND STACK	
HH		BOILER FEEDWATER TANK	
II_1	55TK41	OFF-SPEC OIL STORAGE TANK	15,000 GALLON
II_2	55TK42	OFF-SPEC OIL STORAGE TANK	15,000 GALLON
II_3	55TK43	OFF-SPEC OIL STORAGE TANK	15,000 GALLON
II_4	55TK46	OFF-SPEC OIL STORAGE TANK	22,500 GALLON
II_5	55TK45	OFF-SPEC OIL STORAGE TANK	24,000 GALLON
II_6	55TK44	OFF-SPEC OIL STORAGE TANK	20,000 GALLON
KK	52TK34	OFF-SPEC CAUSTIC STORAGE	7000 GALLON
LL		AIR STRIPPER	
MM		DE-HYDRATION FLASH DRUM	10,000 GALLON
NN		OVERHEADS RECEIVER	4,200 GALLON
JJ		CENTRIFUGE	



MARK	EQUIP ID	DESCRIPTION	SPECIFICATIONS
A	52TK51	OIL STORAGE TANK	1,000,000 GALLON
B	52TK50	OIL SKIMMING STORAGE TANK	10,000 GALLON
C		SAMPLE STORAGE BUILDING	
D	SEP PIT	SEPARATOR PIT	68,000 GALLON
E	F4	FRAC-TANK 4	22,000 GALLON
F	F1 – F23	OFF-SPEC OIL STORAGE FRAC-TANKS	(22X) 22,000 GALLON
G	ASP	AUXILIARY SEPARATOR PIT	30,000 GALLON
H		OIL / WATER SEPARATOR	3000 GALLON
I	52VC01	THERMAL OXIDIZER	
J	BLDG 3	CHEMICAL BUILDING	
K	WEST MMG – EAST MMG	RAW WATER STORAGE TANKS	(2X) 1,000,000 GALLON
L	52TK06	DEMULSIFICATION TANK / STORAGE	90,000 GALLON
M	52TK07	PRECIPITATION TANK 0.S. 1-07	90,000 GALLON
N	52TK03	VIRGIN CAUSTIC STORAGE	3000 GALLON
O	52TK03A	VIRGIN CAUSTIC STORAGE	3000 GALLON
P	52TK02	VIRGIN CAUSTIC	10,000 GALLON
Q		FLOCCULANT BUILDING	
R	52SP01A / 52SP01B	API OIL /WATER SEPARATORS	(2X) 30,000 GALLON



On July 18, ESI was informed by a customer that it had discovered about 28 ppm PCBs in a used oil shipment from ESI. The customer returned the shipment to ESI, where it was segregated into a holding tank. ESI determined that the shipment had been loaded at ESI on July 13. ESI obtained PCB analyses of retain samples of incoming used oil shipments and determined that ESI had received PCB-contaminated used oil in two shipments on July 6, 2007, from a single source (Bee Environmental, a used oil broker). ESI stopped processing used oil on July 18 and contacted its customers to recall every available shipment from ESI that could have contained PCBs. Return loads were placed into product holding tanks. The PCB concentration of the used oil in the segregation tank is below 50 ppm.

ESI's process consists of several interconnected storage tanks, holding tanks and process units. Used oil shipments received by ESI are mixed and processed in a continuous system. Processed used oil is placed into and held in one of ten holding tanks prior to loading and delivery to ESI's customers. Given the volume of PCB-free oil into which the Bee Environmental shipments were mixed, ESI has determined that none of ESI's equipment was ever exposed to PCB concentrations of 500 ppm or more. ESI sampled used oil in various vessels to determine the distribution of PCBs in its system. ESI determined that the used oil in one product holding tank contains about 58.8 ppm PCBs. Every other sample indicated less than 50 ppm PCBs.

ESI processed approximately 200,000 gallons per day of PCB-free used oil between July 6, the date of the last PCB-contaminated used oil shipment received by ESI, and July 18, the date ESI discontinued shipping processed oil. ESI has determined that during this period, ESI flushed all of its processing equipment three times with a solvent, used oil, in accordance with the self-implementing decontamination procedures in 40 C.F.R. 761.79(c). The oil in ESI's processes is an ideal solvent for PCBs because PCBs are highly soluble in that oil. Running oil through the ESI system, therefore, effectively and efficiently removes residual PCBs from the system. ESI believes that running its processes for the 11 or 12 days between July 6, when ESI received the PCB tainted shipment from Bee Environmental, and July 18, when ESI discovered the PCBs, has effectively resulted in flushing the system more than the three times required by the self-implementing decontamination procedures under 40 CFR 761.79(c). However, because the used oil in product holding tank #9 contains about 58.8 ppm PCBs, ESI is handling the material in this product holding tank #9 under the assumption that it has not been effectively decontaminated. ESI also proposes to continue to monitor the system and sample for PCBs to confirm that PCBs have been decontaminated in all other parts of that process.

ESI's Plan to Complete Decontamination

ESI proposes to complete the decontamination of any residual PCBs in its equipment as follows. ESI will ship the contents of product holding tank #9 to an off-site facility equipped and permitted to treat or dispose of PCB-contaminated used oil. ESI has submitted profiles and samples for approval by Onyx Environmental in Port Arthur, Texas. ESI will then decontaminate product holding tank #9 by flushing it three times with used oil containing less

PLEWS SHADLEY RACHER & BRAUN LLP

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[1] REGISTERED MEDIATOR
[2] ALSO ADMITTED IN THE DISTRICT OF COLUMBIA
[3] ALSO ADMITTED IN ILLINOIS
[4] ALSO ADMITTED IN NEW YORK
[5] ALSO ADMITTED IN MICHIGAN
[6] ALSO ADMITTED IN KENTUCKY
[7] REGISTERED TO PRACTICE BEFORE THE U.S. PATENT AND TRADEMARK OFFICE
[8] ALSO ADMITTED IN OREGON
[9] ALSO ADMITTED IN VIRGINIA

July 25, 2007

Via Fax (308-3063) and Email (gritchot@idem.in.gov)

George Ritchotte
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, IN 46208

Re: PCB-Contaminated Used Oil Discovered at ESI Environmental, Inc., 4910 West 86th Street, Indianapolis, Indiana

Dear George:

ESI Environmental, Inc. ("ESI") has engaged us to advise ESI how best to respond to PCB contamination discovered at ESI's used oil facility at 4910 West 86th Street, Indianapolis, Indiana (the "ESI Facility"). We understand that you have been providing very helpful regulatory oversight to ESI in this situation. We further understand that you have had some discussions with officials of USEPA and that you have requested a summary of ESI's plan to respond to the PCB contamination at ESI's facility. ESI very much appreciates your assistance in dealing with this difficult situation, and we appreciate your willingness to help us work with IDEM and USEPA to come up with a plan to respond to the PCB contamination.

ESI is a used oil processing facility that operates pursuant to 40 C.F.R. Part 279. ESI processes used oil that ESI receives from generators either directly or through brokers. ESI has an analysis plan for incoming used oil pursuant to 40 C.F.R. 279.54. ESI samples incoming shipments but does not analyze for PCBs. ESI requires and relies on generator certifications for each incoming shipment that the incoming used oil does not contain any quantifiable level of PCBs.

than 50 ppm PCBs, in accordance with 40 CFR 761.69(c). Seven other product holding tanks contain quantifiable levels of PCBs (less than 50 ppm but greater than 2 ppm). ESI will decontaminate those tanks by flushing them three times with used oil containing less than 50 ppm PCBs. Oil used to flush product holding tanks will be transferred to a segregation tank when the decontamination is complete or the oil contains greater than 50 ppm PCBs.

After the product holding tanks are decontaminated, ESI will sample and determine the PCB concentration, if any, in each product holding tank before any shipment is loaded out of that tank. Processed oil that contains 2.0 ppm PCBs or more will be transferred to the segregation tank. Processed oil that contains less than 2.0 ppm PCBs may be distributed in commerce as used oil pursuant to 40 CFR Part 279. ESI will continue this process until each product holding tank has been turned over at least three times with processed oil containing less than 2.0 ppm PCBs.

ESI will either decontaminate the oil in the segregation tank pursuant to 40 CFR 761.69(b)(2) or will ship it to an off-site facility equipped and permitted to treat used oil containing greater than 2.0 ppm PCBs but less than 50 ppm. Some of these facilities have requested confirmation from IDEM and USEPA that they may accept these materials. Please confirm that ESI can market and sell any oil from ESI containing PCBs between 2 and 50 ppm pursuant to 40 CFR 761.79(g) (3) and 761.20(e) (marketing and burning of used oil containing quantifiable levels of PCBs less than 50 ppm). Any oil containing 50 ppm or more PCBs will be sent to Onyx or another permitted disposal facility. After the segregation tank is emptied, ESI will decontaminate the segregation tank by flushing it three times with incoming used oil containing less than 50 ppm PCBs, in accordance with 40 CFR 761.79(c).

ESI will maintain all records required by 40 CFR 761 and 40 CFR 279.

Please let ESI, or me or Curt DeVoe in this office, know if ESI's plan to complete decontamination is acceptable or contact us with any questions. As you know, ESI faces severe financial problems unless it can resume shipping processed oil as soon as possible. ESI also wants to address the PCB contamination at its Facility as soon as possible and in accordance with all legal requirements. Therefore, we appreciate your prompt review of this matter and your continued assistance.

Sincerely,

J. Michael Bowman

cc: Curt DeVoe
Tom Gawlik, ESI
Pat Kotter, ESI

Anton Martig/R5/USEPA/US To
08/13/2007 08:14 AM

Subject Fw: ECI Cleanup plan

----- Forwarded by Anton Martig/R5/USEPA/US on 08/13/2007 08:14 AM -----

"RITCHOTTE, GEORGE" <GRITCHOT@idem.IN.gov> To
07/26/2007 02:15 PM Subject ECI Cleanup plan

Tony:

Have you by any chance had an opportunity to take a look at the ECI (Indianapolis) cleanup plan for their used oil process system. Priscilla mentioned that you might be able to take a look at it and provide comments/approve their plan... The reason why I thought it needed some sort of approval (written or verbal) is that they are not planning on disposing of all of the original contaminated oils. They are both using the oils as decon solvent and instead of sending them off to a TSCA incinerator or high effiency boiler, they are going to send it to a 761.20(g) type facility...

They are in dire straights because of their inability to receive any additional liquids because they are out of space.. And I don't feel comfortable saying yes at this time because I don't want my/IDEM's decision to be viewed as less stringent...

Any assistance you can give would be greatly appreciated by both myself and ESI. I realize that you and your staffs time is pretty well already spoken for...

THANKS YOU
George Ritchotte

P.S: I am not in the office today, but I can be reached on my cell phone at 317-308-3123 if you have questions or would like to discuss this case...

THANK You...

Anton Martig/R5/USEPA/US To
08/20/2007 12:51 PM

Subject Fw: ESI Environmental, Inc.

Priscilla,
Here's the contact for ESI. He's their attorney.

----- Forwarded by Anton Martig/R5/USEPA/US on 08/20/2007 12:51 PM -----

"Mike Bowman" <mbowman@psrb.com> To
08/14/2007 11:10 AM

Subject ESI Environmental, Inc.

Tony,

A brief update on the situation at ESI Environmental, Inc. in Indianapolis. Please forward this information to Ms. Bezerra, from whom we have not yet heard.

As discussed in my letter to you of August 8, 2007, we have completely flushed all processing equipment and tanks at our facility many more than three times with solvent consisting of used oil. We have also flushed the dehydration and centrifuge equipment and tanks more than three times with solvents consisting of kerosene and diesel fuel, all in accordance with 40 CFR 271.79(c)(1). All samples from every part of our process now consistently show less than 2.0 ppm PCBs. We intend to resume our routine processing of oily wastewater later today. The product oil will not be mixed with any of the flush solvent (or used oil) discussed in my earlier letter. We will continue to sample our product oil to verify that we do not distribute into commerce any used oil containing 2.0 ppm PCBs or more.

None of this reflects any change to the disposition of the flush solvent described in my earlier letter. The Bee Load (and the used oil into which it mixed) is still held in product tanks 1 and 9. We have received final approval from a TSCA incinerator and expect to arrange for incineration of that material in the near future. The initial flush solvent that contains between 2.0 ppm and less than 50 ppm PCBs, including the solvent we were able to recall from customers after discovering the contamination, is still held in product tanks 2-6 and 10 (tanks 7 and 8 are and have always been PCB-free), and tank 51. None of that material has left the site, because the kilns with whom we have talked are reluctant to burn that material without EPA's concurrence that it is not TSCA regulated. Although we can safely operate the facility and produce good oil without using the product frac tanks and tank 51, it is much more difficult and expensive to do so. We need to be in a position to start sending the stored solvent to be burned for energy recovery in accordance with 40 CFR 761.20(e)(1)(ii) and 761.79(g)(3) as soon as possible. To that end, please let me know if there is any additional information you or Ms. Bezerra require in order to complete your analysis.

Thank you again for your consideration.

Mike

J. Michael Bowman
Plews Shadley Racher & Braun LLP
1346 N. Delaware Street
Indianapolis, IN 46202
Telephone: 317-637-0700
Telecopier: 317-637-0710
E-mail: mbowman@psrb.com

"Curt DeVoe"
<cdevoe@psrb.com>
08/23/2007 05:12 PM

To

Subject ESI Environmental, Inc. - PCB decontamination/flushing description

Priscilla and George:

Thanks again for talking to Tom Gawlik and Joe Biggio of ESI Environmental, Inc. on Tuesday. At the conclusion of that call, you asked them to describe in detail the PCB decontamination/flushing process they had described on the telephone. Joe Biggio prepared the attached at your request. You also asked for copies of the analyticals on samples of the flush material; those are attached as exhibits to Joe's summary. I believe you also wanted to know the amounts and location within the plant of material that ESI is trying to handle in accordance with applicable legal requirements after this docontamination/flushing process. That is Exhibit I to the attached. Joe Biggio has been out of the office all day, and Tom Gawlik also was out part of today, so they asked me to put the various pieces of this document together, mark the exhibits, and email this to you. Please review the attached and contact me with any other questions. I have reviewed this in detail with Joe and Tom, and they had to be able to make me understand clearly what they were describing. Hopefully it will be clear to you as well. I may be able to answer questions, or I can try to track down Joe or Tom if we need their input. You can also try Mike Bowman in my office if you cannot reach me. Thanks again for your continued assistance. We look forward to your confirmation that this and ESI's previous submittals are in accordance with EPA and IDEM requirements. Specifically, ESI needs confirmation it can move the remaining materials out of the plant as soon as possible as described in the attached and the previous submittals.

Curt DeVoe

Plews Shadley Racher & Braun LLP

1346 North Delaware Street

Indianapolis, Indiana 46202-2415

cdevoe@psrb.com

317-637-0700

Fax 317-968-0976

PCB Flushing Process 7-18 -- 8-14.ESI.pdf

"RITCHOTTE, GEORGE" <GRITCHOT@idem.IN.gov>
08/28/2007 04:11 PM

To

Subject FW: PCB's

Priscilla.. This is the first email from ESI which contained attachments

George

-----Original Message-----
From: Patrick.Kotter@ESIEnvironmental.com
[mailto:Patrick.Kotter@ESIEnvironmental.com]
Sent: Thursday, July 19, 2007 3:15 PM
To: RITCHOTTE, GEORGE
Cc: Gawlik@ESIEnvironmental.com; joe.biggio@ESIEnvironmental.com
Subject: RE: PCB's

George,

Attached are a drawing and flow diagrams. We really need your assistance to
properly manage this contaminated oil. Please call or come to our facility
at your earliest convenience. We are available at any time.

-----Original Message-----
From: RITCHOTTE, GEORGE [mailto:GRITCHOT@idem.IN.gov]
Sent: Thursday, July 19, 2007 2:22 PM
To: Patrick.Kotter@ESIEnvironmental.com
Subject: RE: PCB's

Pat,

Can you also provide me with a drawing and/or flow chart of your facility.
The primary issue for this is knowing how oils get into each of these tanks.
If there is a common route for all.

George

From: Patrick.Kotter@ESIEnvironmental.com
[mailto:Patrick.Kotter@ESIEnvironmental.com]
Sent: Thu 7/19/2007 1:16 PM
To: RITCHOTTE, GEORGE
Cc: Gawlik@ESIEnvironmental.com; joe.biggio@ESIEnvironmental.com
Subject: PCB's

George,

I understand that you are have some telephone difficulty today. We have

tested several tanks at our facility and have found PCB' ranging from 5.4 to
58.8 ppm. We have still not located the source or initial concentration of
the incoming material. We are trying to form a plan to isolate the oil and
to properly dispose of the contaminated oil. We need your input and
direction for the management of the contaminated oil. Please e-mail, or
telephone when possible.

Thanks

Patrick Kotter
Compliance Manager
ESI Environmental, Inc.
(317) 874-0074 ext. 1108
(317) 874-0108, fax
www.ecologicalsystems.com


ESI Plot Tank ID.JPG


Compliance Manual 6-07 34.pdf


Compliance Manual 6-07 35.pdf

Priscilla Fonseca/R5/USEPA/US
08/30/2007 04:50 PM

To

Subject ESI-

Bee loads were received at the following dates with the corresponding PCB results:

7/06/07- 1375 gallons at 1825 ppm
3,825 gallons at 150 ppm

7/10/07 963 gallons- 25 ppm

7/11/07 2,013 gallons - < 5 ppm

ESI submitted samples taken from their Frac tanks 1,2,3,5,9,and 10 and tank 3106, 3111(rejected load) showing PCB concentrations between 20 and 50 ppm except for tank 9 which is 53.81 ppm. EPS also submiited the loads sent out (accepted by their customers) and rejected from 7/10/07 to 7/18/07. If it takes according to ESI 3 days to process a daily load (30,000 oil), some of the oil may have been used by its customer(not testing the load) and not accounted for. If the high PCB concentration was from Bee Environmental load which was acceoted in 7/06/07; may have started processing the next day -7/07/07-7/08/07-7/09/07 (3days)- one of the out going load in 7/10/07 was tested and accepted by Permafix who was the one who tested the out going load dated 7/18/07.

It is really hard to track down the out going processed oil after the Bee loads were processed unless there is a log for every oil that comes showing when it was received, processed and placed in which tank. To take into account the amount of oil they processed which they claim more than enough to flush the whole system, the volume may be consedered more than three times of the flushing needed. In addition ESI submitted additional information of the flushing procedure they conducted, first time using kerosene and then the diesel fuel.

The issue now is which of this tanks are TSCA regulated. This for you Tony to decide. I recommend that the tanks listed in the 7/18/07 be considred TSCA regulated . Tank 51 is one of the tanks, if I am right based on my notes, this contain about 300.000 gallons when this was sampled in 7/18/07 at concentration of 21.99 ppm (I think at this concentration and the volume, it shows that it might have the bulk of the > 50 ppm load processed. The problem is that ESI added the recent contents of each of the processing tanks and the subsequent flushings of those tanks.

We both (George and I) are not sure how to address this issue. ESI is waiting for our decision.

PLEASE HAVE A TIME TO ADDRESS THIS BEFORE YOU GO ON VACATION.

Priscilla

****

Prisiclla Fonseca, Environmental Scientist
Toxics Program Section
312-886-1334
fax: 312-353-4788
fonseca.priscilla@epa.gov

Priscilla
Fonseca/R5/USEPA/US

To

09/04/2007 04:14 PM

Subject ESI

ESI may have processed five times the total volume of all the process tanks and frac tanks, however the PCB concentration of the oil in each of the tanks listed on the certificate of analysis dated 7/18/07 are still high. We don't know when the treated oil which they claimed flush materials were placed on each tank from the time they process the PCB contaminated Bee load. I suggest that we asked them to dispose all the contents of the tanks listed on the 7/18/07 certificate of analysis as TSCA waste, except the West million tank and Tank 51. Additional flushing using kerosene and diesel fuel were added to tank 5. Current volume of the waste in tank 51 is 925,000 gallons. Consideration should be granted for tank 51, to be allowed to dispose to a cement kiln meeting the requirements under the RCRA regulations and who will accept the waste under a risk based approval from U.S. EPA.

In granting them an approval for the alternate disposal of the 925, 000 gallons, can we require them to implement waste analysis for PCBs of incoming load ? I have been telling them about this in all our discussion.

Can we all get together tomorrow morning at your convenience, Tony.

Priscilla

****
Priscilla Fonseca, Environmental Scientist
Toxics Program Section
312-886-1334
fax: 312-353-4788
fonseca.priscilla@epa.gov

"Curt DeVoe"
<cdevoe@psrb.com>
09/20/2007 02:43 PM

To

Subject TSCA coordinated approval, ESI Environmental, Inc., Indianapolis

Priscilla, we would like to accept your offer to discuss this situation in a conference call this coming Monday, September 24. We would like to have that call at 9:30 a.m. Chicago time (10:30 a.m. Indianapolis/Ohio time). In addition to Tom Gawlik from ESI and Mike Bowman and myself from this office, Tom Moore of Systech (and possibly another representative of Systech) will join us on the call. In our conference call this afternoon after you and I talked, Tom Moore described in general terms how their facility works and we all agree the situation seems to fit quite well into the coordinated approval provided by 40 CFR 761.77, but we would like the opportunity to discuss that with you and provide you with more details. Please confirm you will be available at 9:30 a.m. Chicago time or let me know if another time on Monday works better for you, and I'll set up a call-in conference call at that time.

Thanks again for your prompt response to my voicemail today and for your continued efforts to help us get this matter resolved.

Curt DeVoe

Plews Shadley Racher & Braun LLP

1346 North Delaware Street

Indianapolis, Indiana 46202-2415

cdevoe@psrb.com

317-637-0700

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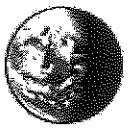

"Jean Bowman"
<jbowman@psrb.com>
09/24/2007 09:07 AM

To

Subject : TSCA coordinated approval, ESI Environmental, Inc., Indianapolis

10:30 a.m. conference call --

Call in Number: 1-800-423-1988

Passcode: 1145713

Moderator: Curt Devoe

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[9] ALSO ADMITTED IN VIRGINIA

July 25, 2007

Via Fax (308-3063) and Email (gritchot@idem.in.gov)

George Ritchotte
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, IN 46208

Re: PCB-Contaminated Used Oil Discovered at ESI Environmental, Inc., 4910 West 86th Street, Indianapolis, Indiana

Dear George:

ESI Environmental, Inc. ("ESI") has engaged us to advise ESI how best to respond to PCB contamination discovered at ESI's used oil facility at 4910 West 86th Street, Indianapolis, Indiana (the "ESI Facility"). We understand that you have been providing very helpful regulatory oversight to ESI in this situation. We further understand that you have had some discussions with officials of USEPA and that you have requested a summary of ESI's plan to respond to the PCB contamination at ESI's facility. ESI very much appreciates your assistance in dealing with this difficult situation, and we appreciate your willingness to help us work with IDEM and USEPA to come up with a plan to respond to the PCB contamination.

ESI is a used oil processing facility that operates pursuant to 40 C.F.R. Part 279. ESI processes used oil that ESI receives from generators either directly or through brokers. ESI has an analysis plan for incoming used oil pursuant to 40 C.F.R. 279.54. ESI samples incoming shipments but does not analyze for PCBs. ESI requires and relies on generator certifications for each incoming shipment that the incoming used oil does not contain any quantifiable level of PCBs.

On July 18, ESI was informed by a customer that it had discovered about 28 ppm PCBs in a used oil shipment from ESI. The customer returned the shipment to ESI, where it was segregated into a holding tank. ESI determined that the shipment had been loaded at ESI on July 13. ESI obtained PCB analyses of retain samples of incoming used oil shipments and determined that ESI had received PCB-contaminated used oil in two shipments on July 6, 2007, from a single source (Bee Environmental, a used oil broker). ESI stopped processing used oil on July 18 and contacted its customers to recall every available shipment from ESI that could have contained PCBs. Return loads were placed into product holding tanks. The PCB concentration of the used oil in the segregation tank is below 50 ppm.

ESI's process consists of several interconnected storage tanks, holding tanks and process units. Used oil shipments received by ESI are mixed and processed in a continuous system. Processed used oil is placed into and held in one of ten holding tanks prior to loading and delivery to ESI's customers. Given the volume of PCB-free oil into which the Bee Environmental shipments were mixed, ESI has determined that none of ESI's equipment was ever exposed to PCB concentrations of 500 ppm or more. ESI sampled used oil in various vessels to determine the distribution of PCBs in its system. ESI determined that the used oil in one product holding tank contains about 58.8 ppm PCBs. Every other sample indicated less than 50 ppm PCBs.

ESI processed approximately 200,000 gallons per day of PCB-free used oil between July 6, the date of the last PCB-contaminated used oil shipment received by ESI, and July 18, the date ESI discontinued shipping processed oil. ESI has determined that during this period, ESI flushed all of its processing equipment three times with a solvent, used oil, in accordance with the self-implementing decontamination procedures in 40 C.F.R. 761.79(c). The oil in ESI's processes is an ideal solvent for PCBs because PCBs are highly soluble in that oil. Running oil through the ESI system, therefore, effectively and efficiently removes residual PCBs from the system. ESI believes that running its processes for the 11 or 12 days between July 6, when ESI received the PCB tainted shipment from Bee Environmental, and July 18, when ESI discovered the PCBs, has effectively resulted in flushing the system more than the three times required by the self-implementing decontamination procedures under 40 CFR 761.79(c). However, because the used oil in product holding tank #9 contains about 58.8 ppm PCBs, ESI is handling the material in this product holding tank #9 under the assumption that it has not been effectively decontaminated. ESI also proposes to continue to monitor the system and sample for PCBs to confirm that PCBs have been decontaminated in all other parts of that process.

ESI's Plan to Complete Decontamination

ESI proposes to complete the decontamination of any residual PCBs in its equipment as follows. ESI will ship the contents of product holding tank #9 to an off-site facility equipped and permitted to treat or dispose of PCB-contaminated used oil. ESI has submitted profiles and samples for approval by Onyx Environmental in Port Arthur, Texas. ESI will then decontaminate product holding tank #9 by flushing it three times with used oil containing less

than 50 ppm PCBs, in accordance with 40 CFR 761.69(c). Seven other product holding tanks contain quantifiable levels of PCBs (less than 50 ppm but greater than 2 ppm). ESI will decontaminate those tanks by flushing them three times with used oil containing less than 50 ppm PCBs. Oil used to flush product holding tanks will be transferred to a segregation tank when the decontamination is complete or the oil contains greater than 50 ppm PCBs.

After the product holding tanks are decontaminated, ESI will sample and determine the PCB concentration, if any, in each product holding tank before any shipment is loaded out of that tank. Processed oil that contains 2.0 ppm PCBs or more will be transferred to the segregation tank. Processed oil that contains less than 2.0 ppm PCBs may be distributed in commerce as used oil pursuant to 40 CFR Part 279. ESI will continue this process until each product holding tank has been turned over at least three times with processed oil containing less than 2.0 ppm PCBs.

ESI will either decontaminate the oil in the segregation tank pursuant to 40 CFR 761.69(b)(2) or will ship it to an off-site facility equipped and permitted to treat used oil containing greater than 2.0 ppm PCBs but less than 50 ppm. Some of these facilities have requested confirmation from IDEM and USEPA that they may accept these materials. Please confirm that ESI can market and sell any oil from ESI containing PCBs between 2 and 50 ppm pursuant to 40 CFR 761.79(g) (3) and 761.20(e) (marketing and burning of used oil containing quantifiable levels of PCBs less than 50 ppm). Any oil containing 50 ppm or more PCBs will be sent to Onyx or another permitted disposal facility. After the segregation tank is emptied, ESI will decontaminate the segregation tank by flushing it three times with incoming used oil containing less than 50 ppm PCBs, in accordance with 40 CFR 761.79(c).

ESI will maintain all records required by 40 CFR 761 and 40 CFR 279.

Please let ESI, or me or Curt DeVoe in this office, know if ESI's plan to complete decontamination is acceptable or contact us with any questions. As you know, ESI faces severe financial problems unless it can resume shipping processed oil as soon as possible. ESI also wants to address the PCB contamination at its Facility as soon as possible and in accordance with all legal requirements. Therefore, we appreciate your prompt review of this matter and your continued assistance.

Sincerely,

J. Michael Bowman

cc: Curt DeVoe
Tom Gawlik, ESI
Pat Kotter, ESI

ESI Environmental, Inc.

Process Flow for Used Oil Containing PCBs

This document describes the processing of used oil at the ESI Environmental, Inc. facility at 4910 West 86th Street, Indianapolis, Indiana. This document describes general processes and flow at the facility as well as the specific processing and flow of used oil containing PCBs from Bee Environmental, introduced into ESI's facility July 6, 2007.

Loads of Used Oil Containing PCBs from Bee Environmental

ESI received a truckload of 1,375 gallons of used oil from Bee Environmental on 7/6/07 (the "Bee Load"). Bee Environmental signed a generator certificate stating the Bee Load did not contain PCBs, and ESI relied on that certificate pursuant to the used oil regulations at 40 CFR Part 279. Therefore, ESI had no idea the Bee Load contained PCBs at the time we accepted it. The Bee Load was later (July 20) analyzed for PCBs. The reported result was ~1825 ppm of PCBs (sampling for all PCBs indicated only Aroclor 1260 was present in the Bee Load). Sampling of our system since the time we discovered PCBs also has revealed only Aroclor 1260. This suggests that the PCBs in our system came from a single source (the Bee Load) and that the PCBs in the Bee Load also came from a single source. Although this sample indicated 1825 ppm PCBs, a sample from the same load analyzed for total halogens at the time of ESI's receipt of the shipment indicated total halogens less than 1000 ppm (ESI analyzed the Bee Load pursuant to the Part 279 regulations because Bee is a broker who picks up oil from multiple generators). The fact that total halogens in the Bee Load were less than 1000 ppm at the time of ESI's receipt of the load suggests that the actual PCB concentration of that load may have been less than 1000 ppm, and certainly less than the 1825 ppm detected in the sample when it was analyzed for PCBs two weeks later. A composite sample from the product frac tanks taken July 3, just before the Bee Loads were introduced into the system, showed non-detect (less than 2 ppm) for PCBs. Again, this suggests that the PCBs later detected in ESI's process came from the Bee Loads.

The Bee Load entered the ESI system in the unloading building (Point A on the drawing, Exhibit I). The tanker truck was unloaded via gravity into the unloading tank (Point B). The unloading tank holds approximately 20,000 gallons of material and is used as a sump to prime the unloading area pumps. The contents of the unloading tank were pumped to the initial storage tank (Point C).

Most of the used oil sent to ESI for processing is oily wastewater. Used oil material entering our facility contains varying amounts of reclamable oil and water. The initial storage tank (Point C) is used to separate free oil from water in the incoming material before feeding the oil into the remainder of the process. The capacity of the initial storage tank is one million gallons. The tank contains approximately 600,000 gallons of solids and sludges at the bottom of the tank. ESI generally operates this tank with a one-day inventory of oily wastewater – approximately 300,000 gallons. Most of this is water. The rest is separate phase oil floating on top of the water.

At any given time, the initial storage tank contains approximately 30,000 gallons of free oil for processing in our facility, sitting on top of the water in the tank. The oil is separated from the bottom and most of the sides of the initial storage tank by the water layer beneath the oil. There is far more water than oil in the tank so this water layer is substantial. Water exits the tank via an underflow-overflow weir and therefore the water layer is never less than at least one foot in depth. PCBs are "hydrophobic" and also highly soluble in oil, so any PCBs in the Bee Load floated in the oil on top of the initial storage tank and never came in contact with the bottom or most of the sides of that tank. We have sampled the sediment in the tank and found no PCBs whatsoever. The Bee Loads also contained virtually no solids, so no PCBs could have dropped to the bottom of the tank. As part of our operating procedures, most of the free oil is skimmed off the top of the initial storage tank daily and is pumped into the used oil sump tank (Point D).

A second truckload of used oil containing PCBs was received from Bee Environmental later the same day of 7/6/07. This second Bee Load was 3,825 gallons and was later analyzed to contain ~150 ppm PCBs. Again, ESI did not know the second Bee Load contained PCBs when ESI accepted the load; Bee signed the same generator certificate as for the first load, ESI relied on that certificate and ESI had no reason to know or suspect the load contained PCBs. The second Bee Load was emptied from the transport truck directly into the oil unloading sump tank (Point D) rather than into the initial storage tank because it had a relatively high concentration of free oil. ESI typically takes high free oil content loads into the oil unloading sump tank and lower oil content loads into the initial storage tank. The oil unloading sump tank has a capacity of 3,000 gallons. This tank, unlike the initial storage tank, is completely emptied and refilled on a regular basis as loads are placed into the tank and move from that tank into the used oil process. The second Bee Load, like the first Bee Load, was then pumped into the dehydration feed tanks (Point E).

On 7/10 Bee brought in a load of 963 gallons subsequently sampled at ~25ppm PCBs and another load on 7/11 of 2,013 gallons subsequently sampled at <5ppm PCB's. These third and fourth loads were unloaded at the receiving bay (Point A) and were processed from there in the initial storage tank and then into the dehydration feed tanks 12-14. Again, ESI did not know the loads contained PCBs at the time of unloading and processing because Bee had signed the same generator certificate. It is important to note that all these loads were received on the same trailer as the July 6 loads, which Bee identifies as trailer 2004.

Oil from the oil unloading sump tank is pumped to the dehydration process feed tanks (tanks labeled 12, 13 and 14 at Point E on the drawing). Tanks 12-14 each have an operating capacity of approximately 15,000 gallons. We typically feed oil into the dehydration process from whatever feed tank is available at that time. We do not process oil through these tanks in sequence or in any particular order. We believe the Bee Loads received July 6 were processed through Tanks 13 and 14.

The Bee Loads were then pumped from Tanks 13 and 14 (Point E) into the dehydration process (Point F). The dehydration process is a simple distillation unit with one vessel. A small amount of water is driven out of the oil using non-contact steam. The dehydrated oil is then pumped to one of the 4 storage tanks numbered 43 through 46 (Point G). Each of these tanks has an operating capacity of about 15,000 gallons. The Bee Loads were put into tanks 44 and 46. Tank 45 was not in operation during this time (and was tested non-detect for PCBs). From these tanks, the material is pumped to the centrifuge feed frac tanks 11 and 13 (Point F). Each of these frac tanks holds a volume of about 17,000 gallons. The dehydrated material is fed from these tanks through the centrifuge to remove solids and particulates. The centrifuge is a small horizontal bowl assembly rotating at very high speed. The centrifuge product is pumped to rundown tanks 41 and 42 (Point I), each of which has an operating capacity of about 15,000 gallons.

From tanks 41 and 42 (Point I), the centrifuge liquid product is pumped to the product oil frac tanks marked 1-10 on the drawing (Point J). From tanks 1-10, the oil product is loaded on tanker trucks through the loading boom at the oil rack (Point K). Frac tanks 1-10 have an operating volume of 17,000 gallons each. Processed used oil is shipped by tanker trucks from these frac tanks to ESI's customers. The Bee Loads were pumped from tanks 41 and 42 into frac tanks 1 and 9.

Samples taken from dehydration feed tanks 12, 13 and 14, tank 51, dehydration product tanks 43,44, and 46, centrifuge feed frac tanks 11 and 13, and centrifuge product tanks 41 and 42 after ESI was notified of potential PCB contamination showed PCB contamination between 4 and 35 ppm. Product oil frac tanks 1-10 were sampled for analysis on 7/23/07. Tanks 1, 2, 3, 4, 5, 6, and 10 had PCB levels between 17 and 34.3. Tank 9 was analyzed at 58.8 ppm Aroclor 1260. All other tanks were determined to be free of PCB contamination.

ESI estimates that approximately 2.3 million gallons of oily wastewater were processed through the ESI facility between July 6, when the first Bee Load arrived at the facility, and July 18, when ESI discovered the possibility of PCBs in its plant and stopped processing oil at the facility. We estimate that approximately 260,000 gallons of used oil were processed through the oil processing portion of the ESI facility during this time. Approximately 266,000 gallons were shipped offsite (described in more detail below) between July 10 and July 18 when ESI discovered the possibility of PCBs in its system. Between July 18 and August 6, ESI received and processed approximately 3.4 million gallons of oily wastewater (primarily water). Approximately 800,000 gallons of oil (including amounts recovered and returned to ESI as described more fully below) remain at the facility.

ESI's Flushing and Other Responses to Notice of PCBs in ESI's Process

Immediately upon being notified by PermaFix of the possibility of PCBs in our used oil, we notified IDEM of the situation, recalled all loads of used oil from our facility in transit at that time (described more fully below), sampled our system to determine if PCBs were

present and isolated oil containing PCBs. Residual PCBs remaining in ESI's system from the Bee Loads have been flushed through the system, beginning July 7, through our normal processing of used oil before we were notified of potential PCBs in our system and we stopped processing oil. We also have flushed the dehydration process, feed tanks and all process piping after discovery of the PCBs via the following method. Starting on 8/1/07, we pumped 2,000+ gallons of kerosene solvent (analyzed to be PCB-free) into tank 12, transferred it through the dehydration process, then to tank 43 and then on to the unloading tank. We pumped the kerosene solvent from the unloading tank into tank 13, transferred it through the dehydration process, then to tank 44 and then on to the unloading tank. We pumped the kerosene solvent from the unloading tank into tank 14, transferred it through the dehydration process, then to tank 46 and to centrifuge feed tank 11. We pumped the kerosene solvent from centrifuge feed tank 11 to tank 42. We transferred the kerosene solvent from tank 42 into centrifuge feed tank 13 and then on to tank 41. We transferred the kerosene solvent from tank 41 into oil product tank 6. We transferred the kerosene solvent from oil product tank 6 on to oil product tank 10 and then on to oil storage tank 51. We repeated the process three times using fresh clean kerosene each time and ensuring that the PCB concentration in the solvent material remained below 50 ppm. We sampled the solvent material at the end of each cycle. The results were 18.62 ppm PCB's for the first flush, 6.83 ppm for the second flush, and 3.21 ppm for the third flush. The solvent materials are stored in tank 51 (Point L on the drawing).

The centrifuge sludge produced during this time was collected in a 3,000 gallon tank. This material is awaiting disposal based on its concentration of PCBs and this separate 3,000 gallon tank will be subsequently decontaminated.

We intend to decontaminate the product oil frac tanks in the following manner. The contents of frac tank 9 (sampled at 58.8 ppm Aroclor 1260) will be shipped to the Onyx incinerator in Port Arthur, Texas, a permitted PCB destruction facility. We talked to Safety Kleen in East Chicago but they told us they are not interested in taking the material because their permit would require them to run this material through their process too slowly to make it economically viable for them to process the material. We will also dispose of the contents of frac tank 1 at Onyx. Although this tank currently has oil containing less than 50 ppm PCBs (34.3), the rest of the Bee Load ended up in this tank. After disposing of the material in tanks 1 and 9, we will pump 2,000 gallons of kerosene solvent into frac tank 1, and then pump from frac tank 1 to frac tank 2, 3, 4, and then 5 in succession. We will pump the kerosene solvent through the loading boom lines into T-51 (Point L). We will decontaminate tanks 6, 9 and 10 with kerosene in similar fashion (tanks 7 and 8 are PCB free). We will do this three times, sample the solvent flush material to confirm the PCB content is below 2 ppm in the third flush, and store all the solvent flush material in Tank 51.

Confirmation Requested from EPA

We recognize that the decontamination and disposal process under 40 CFR Part 761 is designed to be largely a self-implementing process. However, we require two things from EPA to complete the decontamination and resume processing of used oil.

First, we would like EPA's confirmation that the process outlined above is acceptable and that, once this process is completed and ESI's system is confirmed to be below 2 ppm PCBs, ESI may resume normal processing and shipments of used oil. Because we first contacted IDEM for assistance in dealing with this situation, IDEM contacted EPA, and there has been some confusion and uncertainty as to how ESI should proceed, we would like to resolve that uncertainty with some confirmation from EPA. EPA has questioned how effectively the residual PCBs in ESI's system from the Bee Loads have been flushed from the system by processing of used oil from the time that the Bee Load first passed through the facility until July 18, when ESI discovered that the Bee Loads contained PCBs. EPA specifically has pointed to the concentrations of PCBs detected in the product frac tanks and other points in the ESI process. However, the PCB concentrations detected at various points in the process are entirely consistent with our view that the processing of oil has had and will continue to have the effect of flushing PCBs out of the system, with the oil acting as the solvent. This is not dilution; it is in fact flushing by dissolving residual PCBs into the oil. ESI processes used oil in approximately 15,000 gallon batches (beginning with dehydration feed tanks 12, 13 or 14, each of which is 15,000 gallons). In fact, the "batching" of ESI's used oil begins at the oil unloading sump tank, which is only 3000 gallons. This batch process explains why we see the PCB concentrations we have in the product tanks later in the ESI process. We would expect to see some concentrating of PCBs at the end of the ESI process, particularly in the dehydration process. This is why we see 35 ppm PCBs in dehy tank 11. We would also expect to see varying PCB concentrations in the product frac tanks. Most of the Bee Load ended up in Tank 9; this tank has the highest PCB concentration (58.8). The rest of the Bee Load ended up in Tank 1; this tank has the second highest PCB concentration (34). The other tanks containing PCBs have used oil which picked up PCBs as it flushed through the portions of the system which had been contaminated by the Bee Load. We have flushed our system at least 6 times since the PCBs were discovered. After this process, we have sampled the oil in the initial storage tank several times and the analyses indicated <2 ppm PCBs. We have pumped the unloading tank and the oil unloading sump tank empty at least once every operating day on average since the PCB contamination was discovered. The PCB-free inbound oil from our customers between July 6 and July 18 effectively already flushed most of the PCB contamination through the system before we began flushing with kerosene. The combination of the two methods has decontaminated the system in accordance with EPA's regulations. ESI will continue to monitor PCB concentrations, if any, in its product used oil to ensure proper disposition of those materials.

Second, we request EPA's confirmation as to final disposition of some of the material contained within ESI's plant. We already are in the process of disposing of the material in product frac tanks 1 and 9 pursuant to 40 CFR 761.60(a) (incineration at Onyx in

Texas). We also contacted several facilities to see if they could take material at concentrations greater than or equal to 2 ppm but less than 50 ppm (including the kerosene solvent material) for energy recovery in accordance with 40 CFR 761.20(e)(1)(ii) and 761.79(g)(3). They have requested some written confirmation from EPA that this is acceptable before they will accept the material.

All of this is consistent with TSCA and the EPA regulations at 40 CFR Part 761 (implementing TSCA) and Part 279 (regulating ESI and other used oil facilities). None of this is contrary to the general rule prohibiting avoidance of TSCA regulation by dilution. EPA's rules make clear that the purpose and intent of the anti-dilution rule is to prohibit intentional dilution and to minimize the improper disposal and handling of PCBs that otherwise might result from persons combining high PCB concentration materials with lower concentration or PCB free materials. 40 CFR 761.79(g) expressly provides that "decontamination waste and residues shall be disposed of at their existing PCB concentration unless otherwise specified." In its comments concerning this and related provisions, EPA indicated the intent was to "ensure that intentional dilution does not otherwise occur." Response to Comments Document on the Proposed Rule – Disposal of Polychlorinated Biphenyls, OPPTS Docket #66009A, May 1998, at p. 176. ESI did not intentionally dilute any PCBs. ESI is just trying to respond to PCBs introduced into its system without its knowledge, intent, or permission and in fact expressly contrary to the generator certification, profile, halogen testing, and other operational safeguards designed to prohibit PCBs from entering ESI's system. The decontamination and disposal process described above also results in a substantial increase, not decrease, in the amount of PCB material that will be incinerated in a TSCA facility or handled pursuant to the other stringent requirements under TSCA than would have resulted if Bee, or the generator who provided the material to Bee, had properly handled the PCB contaminated loads in the first place. Bee introduced a total volume of used oil containing PCBs sampled at 2 ppm or greater of 8,176 gallons into the ESI system. Bee introduced a total volume of used oil containing PCBs sampled at over 50 ppm PCBs of 5,200 gallons. Bee introduced a total volume of used oil containing PCBs sampled at over 500 ppm PCBs of only 1,375 gallons. If Bee had properly handled and disposed of this material, 5,200 gallons of used oil containing PCBs of 50 ppm or greater would have been incinerated at a TSCA facility. The remaining 2,976 gallons could have been burned in accordance with the rules. ESI's approach, on the other hand, will result in approximately 36,000 gallons of material going to a TSCA incinerator (approximately 7 times more material than if Bee had disposed of its first two loads at an incinerator) and tens of thousands of additional gallons going to another energy recovery facility pursuant to the regulations (again, many times more material than if Bee had properly handled its loads).

Tracking and Retrieving Used Oil from ESI Containing PCBs

Finally, EPA asked about what ESI did to track down and recover any loads of used oil containing PCBs shipped out from the ESI facility. The earliest any of the Bee Loads could have made their way through the ESI facility and could have been shipped offsite is July 10. Used oil in our facility typically takes at least 3 days to process and we were processing at a reduced rate between July 6 and 10 due to low demand. We stopped

shipping processed used oil offsite immediately upon discovering potential PCB contamination of our system on July 18. The relevant period therefore is July 10 through July 18.

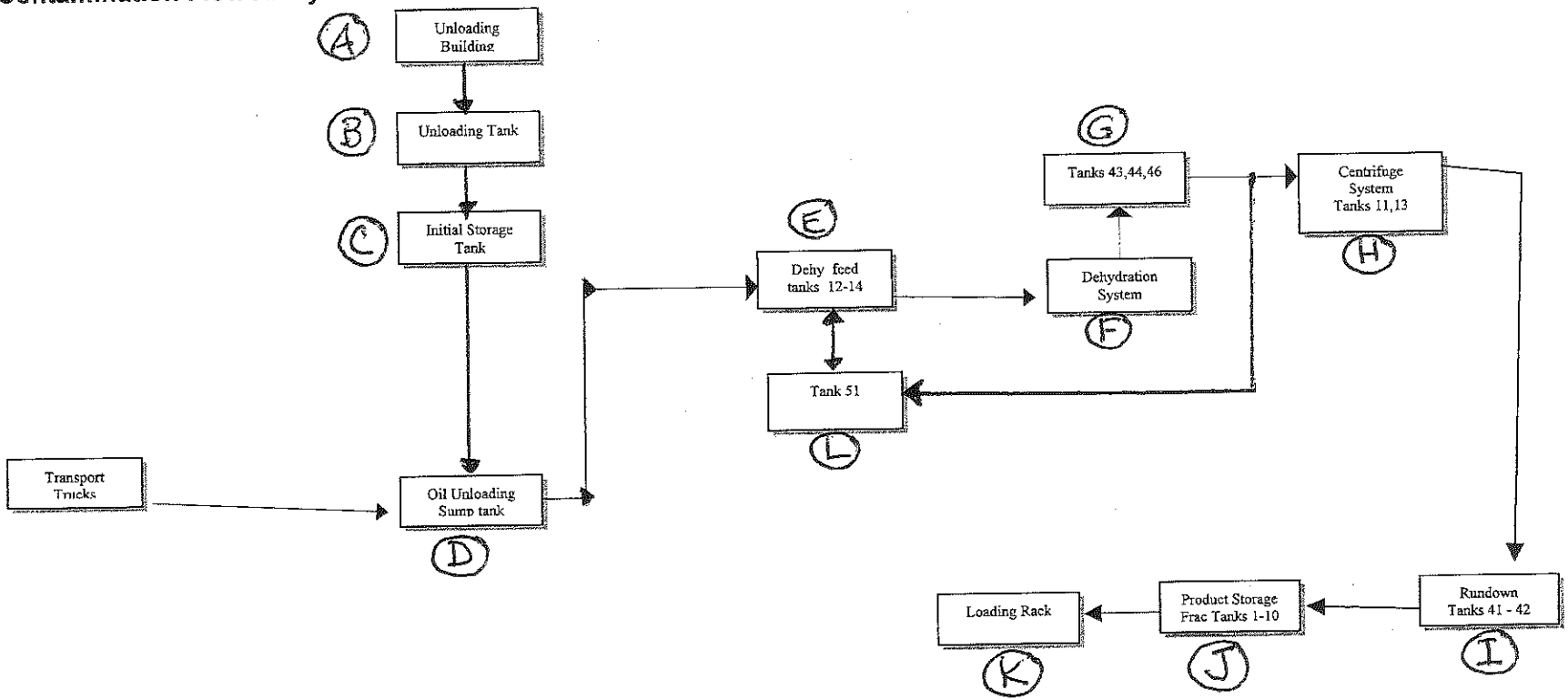
When we were notified by Perma Fix on July 18 that they had identified PCB material in one of our loads of finished oil product (which PermaFix had not unloaded and immediately returned to ESI), we immediately contacted the other customers who had ESI product in route or had recently received shipments. Two of those customers tested their shipments from ESI, found PCBs, and returned the loads to ESI. One load to another customer was stopped in transit and returned to ESI before it reached the customer. PermaFix returned the one load containing PCBs to ESI and tested another load sent shortly after the first load, which did not contain PCBs. All the shipments containing PCBs were captured and returned to our facility, and ESI or the customers decontaminated tanks and trucks which had come in contact with the shipments. Based on our discussions with the various customers, any shipments prior to this timeframe that may have contained PCBs had already been processed or used by the time we discovered PCBs in our system and notified our customers of the potential for PCBs. However, we have no knowledge that any other shipments in fact contained PCBs. PermaFix had tested previous loads from ESI and had not detected any PCBs until the load they received on July 18. ESI has not shipped any used oil since the shipments recovered and returned to the ESI on July 18. ESI therefore has recovered all the used oil shipments from ESI indicated by any customer to contain PCBs.

A list of all shipments of used oil from ESI's facility from July 6 through July 18, and to today since processing stopped on July 18, is attached as Exhibit II. For each shipment, this list shows the date, volume, destination, disposition (no shipments remain at destination facilities to our knowledge, so this category shows whether the shipment was recovered and returned to ESI or was received and used by the receiving facility), and whether ESI believes the shipment contained any used oil originating in any of the Bee Loads.

ESI Environmental, Inc.

Exhibit I

PCB Contamination Flow Analysis



ESI Environmental, Inc. — Exhibit II

Outbound Oil Shipments

July 10-July 18, 2007

order_no	customer_name	Amount shipped (gallons)	Date Shipped	Disposition
71480	EVERCLEAR OF OHIO	5,700	07/10	Received and burned at Republic Steel Mill, Lorraine, OH
71480	EVERCLEAR OF OHIO	5,800	07/10	Received and burned at Republic Steel Mill, Lorraine, OH
71481	EVERCLEAR OF OHIO	5,800	07/10	Received and burned at Republic Steel Mill, Lorraine, OH
71481	EVERCLEAR OF OHIO	6,000	07/10	Received and burned at Republic Steel Mill, Lorraine, OH
71481	EVERCLEAR OF OHIO	6,000	07/10	Received and burned at Republic Steel Mill, Lorraine, OH
71555	FAUSTE OIL SERVICES, INC.	5,700	07/10	Received and burned at various asphalt plants
71556	FAUSTE OIL SERVICES, INC.	5,700	07/10	Received and burned at various asphalt plants
71560	PERMA-FIX OF DAYTON, INC.	5,613	07/10	Load Tested By Customer and Accepted
71526	BEE ENVIRONMENTAL	6,000	07/11	Dispostion unknown
71521	CARBON INJECTION SYSTEMS, LLC	5,521	07/11	Received and burned at WIC Steel Mill, Warren, OH
71522	CARBON INJECTION SYSTEMS, LLC	6,168	07/11	Received and burned at WIC Steel Mill, Warren, OH
71481	EVERCLEAR OF OHIO	5,700	07/11	Received and burned at Republic Steel Mill, Lorraine, OH
71482	EVERCLEAR OF OHIO	6,000	07/11	Received and burned at Republic Steel Mill, Lorraine, OH
71482	EVERCLEAR OF OHIO	6,000	07/11	Received and burned at Republic Steel Mill, Lorraine, OH
71484	EVERCLEAR OF OHIO	6,000	07/11	Received and burned at Republic Steel Mill, Lorraine, OH
71523	CARBON INJECTION SYSTEMS, LLC	6,178	07/12	Received and burned at WIC Steel Mill, Warren, OH
71482	EVERCLEAR OF OHIO	5,200	07/12	Received and burned at Republic Steel Mill, Lorraine, OH
71484	EVERCLEAR OF OHIO	6,000	07/12	Received and burned at Republic Steel Mill, Lorraine, OH
71484	EVERCLEAR OF OHIO	6,000	07/12	Received and burned at Republic Steel Mill, Lorraine, OH
7	EVERCLEAR OF OHIO	6,000	07/12	Received and burned at Republic Steel Mill, Lorraine, OH
;	FAUSTE OIL SERVICES, INC.	5,700	07/12	Received and burned at various asphalt plants
71559	FAUSTE OIL SERVICES, INC.	5,700	07/12	Received and burned at various asphalt plants
71805	CARBON INJECTION SYSTEMS, LLC	6,511	07/15	Received and burned at WIC Steel Mill, Warren, OH
71803	EVERCLEAR OF OHIO	6,000	07/15	Received and burned at Republic Steel Mill, Lorraine, OH
71804	FAUSTE OIL SERVICES, INC.	5,472	07/15	Load Tested By Customer and Accepted
71803	EVERCLEAR OF OHIO	6,000	07/16	Received and burned at Republic Steel Mill, Lorraine, OH
71803	EVERCLEAR OF OHIO	6,000	07/16	Received and burned at Republic Steel Mill, Lorraine, OH
71803	EVERCLEAR OF OHIO	6,000	07/16	Received and burned at Republic Steel Mill, Lorraine, OH
71803	EVERCLEAR OF OHIO	6,000	07/16	Received and burned at Republic Steel Mill, Lorraine, OH
71821	EVERCLEAR OF OHIO	6,300	07/16	Received and burned at Republic Steel Mill, Lorraine, OH
71822	FAUSTE OIL SERVICES, INC	5,700	07/16	Load Returned
71824	SYSTECH ENVIRONMENTAL - JOPPA	6,146	07/16	Load Tested By Customer and Accepted
71823	CARBON INJECTION SYSTEMS, LLC	6,162	07/17	Received and burned at WIC Steel Mill, Warren, OH
71827	CARBON INJECTION SYSTEMS, LLC	6,000	07/17	Received and burned at WIC Steel Mill, Warren, OH
71821	EVERCLEAR OF OHIO	6,000	07/17	Received and burned at Republic Steel Mill, Lorraine, OH
71821	EVERCLEAR OF OHIO	6,000	07/17	Received and burned at Republic Steel Mill, Lorraine, OH
71821	EVERCLEAR OF OHIO	6,000	07/17	Received and burned at Republic Steel Mill, Lorraine, OH
71825	EVERCLEAR OF OHIO	6,000	07/17	Received and burned at Republic Steel Mill, Lorraine, OH
71825	EVERCLEAR OF OHIO	6,000	07/17	Received and burned at Republic Steel Mill, Lorraine, OH
71826	FAUSTE OIL SERVICES, INC.	5,683	07/17	Load Tested By Customer and Accepted
71890	WARRIOR OIL	6,000	07/17	Load Returned
71825	EVERCLEAR OF OHIO	6,000	07/18	Received and burned at Republic Steel Mill, Lorraine, OH
71828	EVERCLEAR OF OHIO	5,800	07/18	Load Returned
71888	PERMA-FIX OF DAYTON, INC.	6,000	07/18	Load Returned
71932	PERMA-FIX OF DAYTON, INC.	6,000	07/18	Load Returned
		266,254		

ESI Environmental, Inc.

Process Flow for Used Oil Containing PCBs

This document describes the processing of used oil at the ESI Environmental, Inc. facility at 4910 West 86th Street, Indianapolis, Indiana. This document describes general processes and flow at the facility as well as the specific processing and flow of used oil containing PCBs from Bee Environmental, introduced into ESI's facility July 6, 2007.

Loads of Used Oil Containing PCBs from Bee Environmental

ESI received a truckload of 1,375 gallons of used oil from Bee Environmental on 7/6/07 (the "Bee Load"). Bee Environmental signed a generator certificate stating the Bee Load did not contain PCBs, and ESI relied on that certificate pursuant to the used oil regulations at 40 CFR Part 279. Therefore, ESI had no idea the Bee Load contained PCBs at the time we accepted it. The Bee Load was later (July 20) analyzed for PCBs. The reported result was ~1825 ppm of PCBs (sampling for all PCBs indicated only Aroclor 1260 was present in the Bee Load). Sampling of our system since the time we discovered PCBs also has revealed only Aroclor 1260. This suggests that the PCBs in our system came from a single source (the Bee Load) and that the PCBs in the Bee Load also came from a single source. Although this sample indicated 1825 ppm PCBs, a sample from the same load analyzed for total halogens at the time of ESI's receipt of the shipment indicated total halogens less than 1000 ppm (ESI analyzed the Bee Load pursuant to the Part 279 regulations because Bee is a broker who picks up oil from multiple generators). The fact that total halogens in the Bee Load were less than 1000 ppm at the time of ESI's receipt of the load suggests that the actual PCB concentration of that load may have been less than 1000 ppm, and certainly less than the 1825 ppm detected in the sample when it was analyzed for PCBs two weeks later. A composite sample from the product frac tanks taken July 3, just before the Bee Loads were introduced into the system, showed non-detect (less than 2 ppm) for PCBs. Again, this suggests that the PCBs later detected in ESI's process came from the Bee Loads.

The Bee Load entered the ESI system in the unloading building (Point A on the drawing, Exhibit I). The tanker truck was unloaded via gravity into the unloading tank (Point B). The unloading tank holds approximately 20,000 gallons of material and is used as a sump to prime the unloading area pumps. The contents of the unloading tank were pumped to the initial storage tank (Point C).

Most of the used oil sent to ESI for processing is oily wastewater. Used oil material entering our facility contains varying amounts of reclamable oil and water. The initial storage tank (Point C) is used to separate free oil from water in the incoming material before feeding the oil into the remainder of the process. The capacity of the initial storage tank is one million gallons. The tank contains approximately 600,000 gallons of solids and sludges at the bottom of the tank. ESI generally operates this tank with a one-day inventory of oily wastewater – approximately 300,000 gallons. Most of this is water. The rest is separate phase oil floating on top of the water.

At any given time, the initial storage tank contains approximately 30,000 gallons of free oil for processing in our facility, sitting on top of the water in the tank. The oil is separated from the bottom and most of the sides of the initial storage tank by the water layer beneath the oil. There is far more water than oil in the tank so this water layer is substantial. Water exits the tank via an underflow-overflow weir and therefore the water layer is never less than at least one foot in depth. PCBs are "hydrophobic" and also highly soluble in oil, so any PCBs in the Bee Load floated in the oil on top of the initial storage tank and never came in contact with the bottom or most of the sides of that tank. We have sampled the sediment in the tank and found no PCBs whatsoever. The Bee Loads also contained virtually no solids, so no PCBs could have dropped to the bottom of the tank. As part of our operating procedures, most of the free oil is skimmed off the top of the initial storage tank daily and is pumped into the used oil sump tank (Point D).

A second truckload of used oil containing PCBs was received from Bee Environmental later the same day of 7/6/07. This second Bee Load was 3,825 gallons and was later analyzed to contain ~150 ppm PCBs. Again, ESI did not know the second Bee Load contained PCBs when ESI accepted the load; Bee signed the same generator certificate as for the first load, ESI relied on that certificate and ESI had no reason to know or suspect the load contained PCBs. The second Bee Load was emptied from the transport truck directly into the oil unloading sump tank (Point D) rather than into the initial storage tank because it had a relatively high concentration of free oil. ESI typically takes high free oil content loads into the oil unloading sump tank and lower oil content loads into the initial storage tank. The oil unloading sump tank has a capacity of 3,000 gallons. This tank, unlike the initial storage tank, is completely emptied and refilled on a regular basis as loads are placed into the tank and move from that tank into the used oil process. The second Bee Load, like the first Bee Load, was then pumped into the dehydration feed tanks (Point E).

On 7/10 Bee brought in a load of 963 gallons subsequently sampled at ~25ppm PCBs and another load on 7/11 of 2,013 gallons subsequently sampled at <5ppm PCB's. These third and fourth loads were unloaded at the receiving bay (Point A) and were processed from there in the initial storage tank and then into the dehydration feed tanks 12-14. Again, ESI did not know the loads contained PCBs at the time of unloading and processing because Bee had signed the same generator certificate. It is important to note that all these loads were received on the same trailer as the July 6 loads, which Bee identifies as trailer 2004.

Oil from the oil unloading sump tank is pumped to the dehydration process feed tanks (tanks labeled 12, 13 and 14 at Point E on the drawing). Tanks 12-14 each have an operating capacity of approximately 15,000 gallons. We typically feed oil into the dehydration process from whatever feed tank is available at that time. We do not process oil through these tanks in sequence or in any particular order. We believe the Bee Loads received July 6 were processed through Tanks 13 and 14.

The Bee Loads were then pumped from Tanks 13 and 14 (Point E) into the dehydration process (Point F). The dehydration process is a simple distillation unit with one vessel. A small amount of water is driven out of the oil using non-contact steam. The dehydrated oil is then pumped to one of the 4 storage tanks numbered 43 through 46 (Point G). Each of these tanks has an operating capacity of about 15,000 gallons. The Bee Loads were put into tanks 44 and 46. Tank 45 was not in operation during this time (and was tested non-detect for PCBs). From these tanks, the material is pumped to the centrifuge feed frac tanks 11 and 13 (Point F). Each of these frac tanks holds a volume of about 17,000 gallons. The dehydrated material is fed from these tanks through the centrifuge to remove solids and particulates. The centrifuge is a small horizontal bowl assembly rotating at very high speed. The centrifuge product is pumped to rundown tanks 41 and 42 (Point I), each of which has an operating capacity of about 15,000 gallons.

From tanks 41 and 42 (Point I), the centrifuge liquid product is pumped to the product oil frac tanks marked 1-10 on the drawing (Point J). From tanks 1-10, the oil product is loaded on tanker trucks through the loading boom at the oil rack (Point K). Frac tanks 1-10 have an operating volume of 17,000 gallons each. Processed used oil is shipped by tanker trucks from these frac tanks to ESI's customers. The Bee Loads were pumped from tanks 41 and 42 into frac tanks 1 and 9.

Samples taken from dehydration feed tanks 12, 13 and 14, tank 51, dehydration product tanks 43,44, and 46, centrifuge feed frac tanks 11 and 13, and centrifuge product tanks 41 and 42 after ESI was notified of potential PCB contamination showed PCB contamination between 4 and 35 ppm. Product oil frac tanks 1-10 were sampled for analysis on 7/23/07. Tanks 1, 2, 3, 4, 5, 6, and 10 had PCB levels between 17 and 34.3. Tank 9 was analyzed at 58.8 ppm Aroclor 1260. All other tanks were determined to be free of PCB contamination.

ESI estimates that approximately 2.3 million gallons of oily wastewater were processed through the ESI facility between July 6, when the first Bee Load arrived at the facility, and July 18, when ESI discovered the possibility of PCBs in its plant and stopped processing oil at the facility. We estimate that approximately 260,000 gallons of used oil were processed through the oil processing portion of the ESI facility during this time. Approximately 266,000 gallons were shipped offsite (described in more detail below) between July 10 and July 18 when ESI discovered the possibility of PCBs in its system. Between July 18 and August 6, ESI received and processed approximately 3.4 million gallons of oily wastewater (primarily water). Approximately 800,000 gallons of oil (including amounts recovered and returned to ESI as described more fully below) remain at the facility.

ESI's Flushing and Other Responses to Notice of PCBs in ESI's Process

Immediately upon being notified by PermaFix of the possibility of PCBs in our used oil, we notified IDEM of the situation, recalled all loads of used oil from our facility in transit at that time (described more fully below), sampled our system to determine if PCBs were

present and isolated oil containing PCBs. Residual PCBs remaining in ESI's system from the Bee Loads have been flushed through the system, beginning July 7, through our normal processing of used oil before we were notified of potential PCBs in our system and we stopped processing oil. We also have flushed the dehydration process, feed tanks and all process piping after discovery of the PCBs via the following method. Starting on 8/1/07, we pumped 2,000+ gallons of kerosene solvent (analyzed to be PCB-free) into tank 12, transferred it through the dehydration process, then to tank 43 and then on to the unloading tank. We pumped the kerosene solvent from the unloading tank into tank 13, transferred it through the dehydration process, then to tank 44 and then on to the unloading tank. We pumped the kerosene solvent from the unloading tank into tank 14, transferred it through the dehydration process, then to tank 46 and to centrifuge feed tank 11. We pumped the kerosene solvent from centrifuge feed tank 11 to tank 42. We transferred the kerosene solvent from tank 42 into centrifuge feed tank 13 and then on to tank 41. We transferred the kerosene solvent from tank 41 into oil product tank 6. We transferred the kerosene solvent from oil product tank 6 on to oil product tank 10 and then on to oil storage tank 51. We repeated the process three times using fresh clean kerosene each time and ensuring that the PCB concentration in the solvent material remained below 50 ppm. We sampled the solvent material at the end of each cycle. The results were 18.62 ppm PCB's for the first flush, 6.83 ppm for the second flush, and 3.21 ppm for the third flush. The solvent materials are stored in tank 51 (Point L on the drawing).

The centrifuge sludge produced during this time was collected in a 3,000 gallon tank. This material is awaiting disposal based on its concentration of PCBs and this separate 3,000 gallon tank will be subsequently decontaminated.

We intend to decontaminate the product oil frac tanks in the following manner. The contents of frac tank 9 (sampled at 58.8 ppm Aroclor 1260) will be shipped to the Onyx incinerator in Port Arthur, Texas, a permitted PCB destruction facility. We talked to Safety Kleen in East Chicago but they told us they are not interested in taking the material because their permit would require them to run this material through their process too slowly to make it economically viable for them to process the material. We will also dispose of the contents of frac tank 1 at Onyx. Although this tank currently has oil containing less than 50 ppm PCBs (34.3), the rest of the Bee Load ended up in this tank. After disposing of the material in tanks 1 and 9, we will pump 2,000 gallons of kerosene solvent into frac tank 1, and then pump from frac tank 1 to frac tank 2, 3, 4, and then 5 in succession. We will pump the kerosene solvent through the loading boom lines into T-51 (Point L). We will decontaminate tanks 6, 9 and 10 with kerosene in similar fashion (tanks 7 and 8 are PCB free). We will do this three times, sample the solvent flush material to confirm the PCB content is below 2 ppm in the third flush, and store all the solvent flush material in Tank 51.

Confirmation Requested from EPA

We recognize that the decontamination and disposal process under 40 CFR Part 761 is designed to be largely a self-implementing process. However, we require two things from EPA to complete the decontamination and resume processing of used oil.

First, we would like EPA's confirmation that the process outlined above is acceptable and that, once this process is completed and ESI's system is confirmed to be below 2 ppm PCBs, ESI may resume normal processing and shipments of used oil. Because we first contacted IDEM for assistance in dealing with this situation, IDEM contacted EPA, and there has been some confusion and uncertainty as to how ESI should proceed, we would like to resolve that uncertainty with some confirmation from EPA. EPA has questioned how effectively the residual PCBs in ESI's system from the Bee Loads have been flushed from the system by processing of used oil from the time that the Bee Load first passed through the facility until July 18, when ESI discovered that the Bee Loads contained PCBs. EPA specifically has pointed to the concentrations of PCBs detected in the product frac tanks and other points in the ESI process. However, the PCB concentrations detected at various points in the process are entirely consistent with our view that the processing of oil has had and will continue to have the effect of flushing PCBs out of the system, with the oil acting as the solvent. This is not dilution; it is in fact flushing by dissolving residual PCBs into the oil. ESI processes used oil in approximately 15,000 gallon batches (beginning with dehydration feed tanks 12, 13 or 14, each of which is 15,000 gallons). In fact, the "batching" of ESI's used oil begins at the oil unloading sump tank, which is only 3000 gallons. This batch process explains why we see the PCB concentrations we have in the product tanks later in the ESI process. We would expect to see some concentrating of PCBs at the end of the ESI process, particularly in the dehydration process. This is why we see 35 ppm PCBs in dehy tank 11. We would also expect to see varying PCB concentrations in the product frac tanks. Most of the Bee Load ended up in Tank 9; this tank has the highest PCB concentration (58.8). The rest of the Bee Load ended up in Tank 1; this tank has the second highest PCB concentration (34). The other tanks containing PCBs have used oil which picked up PCBs as it flushed through the portions of the system which had been contaminated by the Bee Load. We have flushed our system at least 6 times since the PCBs were discovered. After this process, we have sampled the oil in the initial storage tank several times and the analyses indicated <2 ppm PCBs. We have pumped the unloading tank and the oil unloading sump tank empty at least once every operating day on average since the PCB contamination was discovered. The PCB-free inbound oil from our customers between July 6 and July 18 effectively already flushed most of the PCB contamination through the system before we began flushing with kerosene. The combination of the two methods has decontaminated the system in accordance with EPA's regulations. ESI will continue to monitor PCB concentrations, if any, in its product used oil to ensure proper disposition of those materials.

Second, we request EPA's confirmation as to final disposition of some of the material contained within ESI's plant. We already are in the process of disposing of the material in product frac tanks 1 and 9 pursuant to 40 CFR 761.60(a) (incineration at Onyx in

Texas). We also contacted several facilities to see if they could take material at concentrations greater than or equal to 2 ppm but less than 50 ppm (including the kerosene solvent material) for energy recovery in accordance with 40 CFR 761.20(e)(1)(ii) and 761.79(g)(3). They have requested some written confirmation from EPA that this is acceptable before they will accept the material.

All of this is consistent with TSCA and the EPA regulations at 40 CFR Part 761 (implementing TSCA) and Part 279 (regulating ESI and other used oil facilities). None of this is contrary to the general rule prohibiting avoidance of TSCA regulation by dilution. EPA's rules make clear that the purpose and intent of the anti-dilution rule is to prohibit intentional dilution and to minimize the improper disposal and handling of PCBs that otherwise might result from persons combining high PCB concentration materials with lower concentration or PCB free materials. 40 CFR 761.79(g) expressly provides that "decontamination waste and residues shall be disposed of at their existing PCB concentration unless otherwise specified." In its comments concerning this and related provisions, EPA indicated the intent was to "ensure that intentional dilution does not otherwise occur." Response to Comments Document on the Proposed Rule – Disposal of Polychlorinated Biphenyls, OPPTS Docket #66009A, May 1998, at p. 176. ESI did not intentionally dilute any PCBs. ESI is just trying to respond to PCBs introduced into its system without its knowledge, intent, or permission and in fact expressly contrary to the generator certification, profile, halogen testing, and other operational safeguards designed to prohibit PCBs from entering ESI's system. The decontamination and disposal process described above also results in a substantial increase, not decrease, in the amount of PCB material that will be incinerated in a TSCA facility or handled pursuant to the other stringent requirements under TSCA than would have resulted if Bee, or the generator who provided the material to Bee, had properly handled the PCB contaminated loads in the first place. Bee introduced a total volume of used oil containing PCBs sampled at 2 ppm or greater of 8,176 gallons into the ESI system. Bee introduced a total volume of used oil containing PCBs sampled at over 50 ppm PCBs of 5,200 gallons. Bee introduced a total volume of used oil containing PCBs sampled at over 500 ppm PCBs of only 1,375 gallons. If Bee had properly handled and disposed of this material, 5,200 gallons of used oil containing PCBs of 50 ppm or greater would have been incinerated at a TSCA facility. The remaining 2,976 gallons could have been burned in accordance with the rules. ESI's approach, on the other hand, will result in approximately 36,000 gallons of material going to a TSCA incinerator (approximately 7 times more material than if Bee had disposed of its first two loads at an incinerator) and tens of thousands of additional gallons going to another energy recovery facility pursuant to the regulations (again, many times more material than if Bee had properly handled its loads).

Tracking and Retrieving Used Oil from ESI Containing PCBs

Finally, EPA asked about what ESI did to track down and recover any loads of used oil containing PCBs shipped out from the ESI facility. The earliest any of the Bee Loads could have made their way through the ESI facility and could have been shipped offsite is July 10. Used oil in our facility typically takes at least 3 days to process and we were processing at a reduced rate between July 6 and 10 due to low demand. We stopped

shipping processed used oil offsite immediately upon discovering potential PCB contamination of our system on July 18. The relevant period therefore is July 10 through July 18.

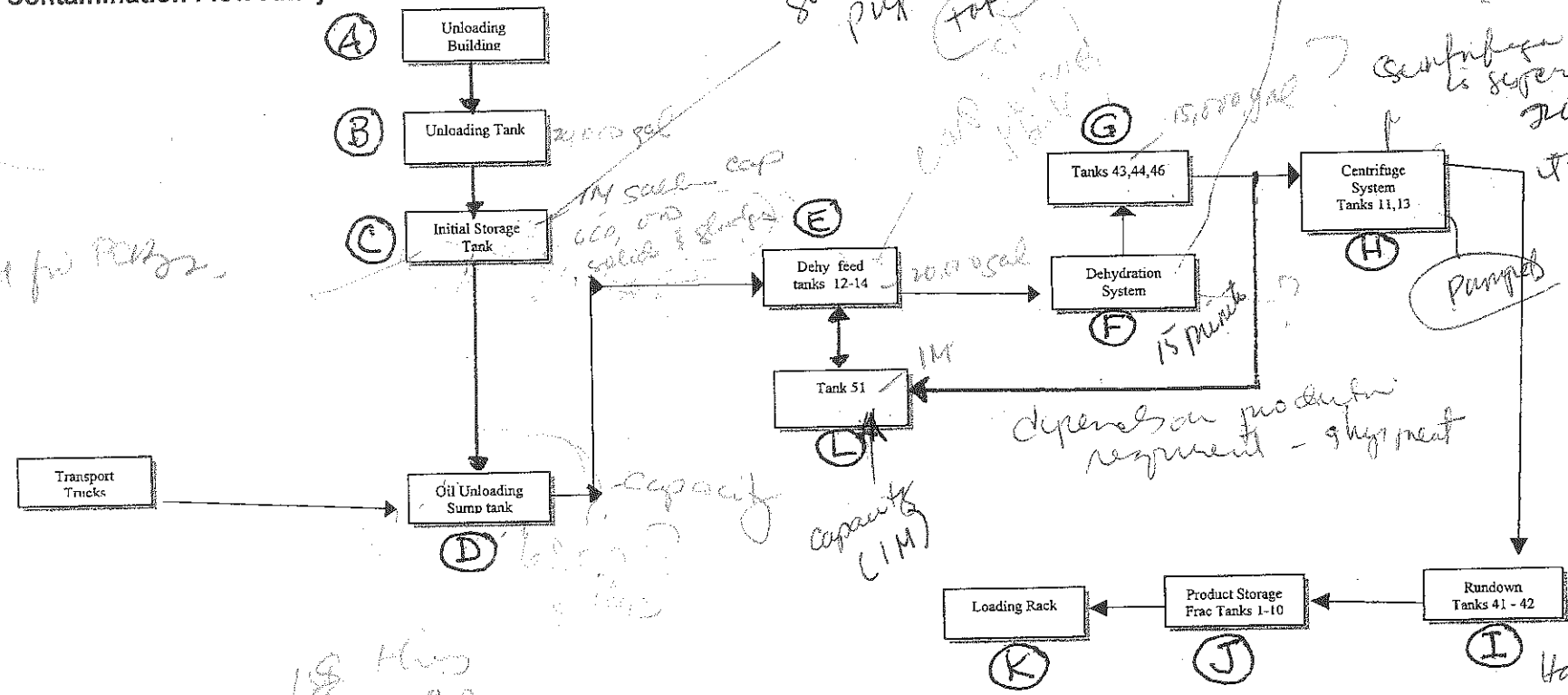
When we were notified by Perma Fix on July 18 that they had identified PCB material in one of our loads of finished oil product (which PermaFix had not unloaded and immediately returned to ESI), we immediately contacted the other customers who had ESI product in route or had recently received shipments. Two of those customers tested their shipments from ESI, found PCBs, and returned the loads to ESI. One load to another customer was stopped in transit and returned to ESI before it reached the customer. PermaFix returned the one load containing PCBs to ESI and tested another load sent shortly after the first load, which did not contain PCBs. All the shipments containing PCBs were captured and returned to our facility, and ESI or the customers decontaminated tanks and trucks which had come in contact with the shipments. Based on our discussions with the various customers, any shipments prior to this timeframe that may have contained PCBs had already been processed or used by the time we discovered PCBs in our system and notified our customers of the potential for PCBs. However, we have no knowledge that any other shipments in fact contained PCBs. PermaFix had tested previous loads from ESI and had not detected any PCBs until the load they received on July 18. ESI has not shipped any used oil since the shipments recovered and returned to the ESI on July 18. ESI therefore has recovered all the used oil shipments from ESI indicated by any customer to contain PCBs.

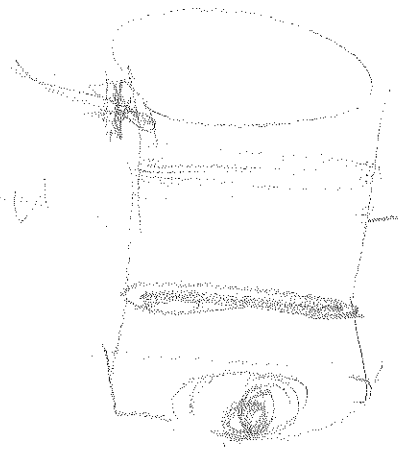
A list of all shipments of used oil from ESI's facility from July 6 through July 18, and to today since processing stopped on July 18, is attached as Exhibit II. For each shipment, this list shows the date, volume, destination, disposition (no shipments remain at destination facilities to our knowledge, so this category shows whether the shipment was recovered and returned to ESI or was received and used by the receiving facility), and whether ESI believes the shipment contained any used oil originating in any of the Bee Loads.

ESI Environmental, Inc.

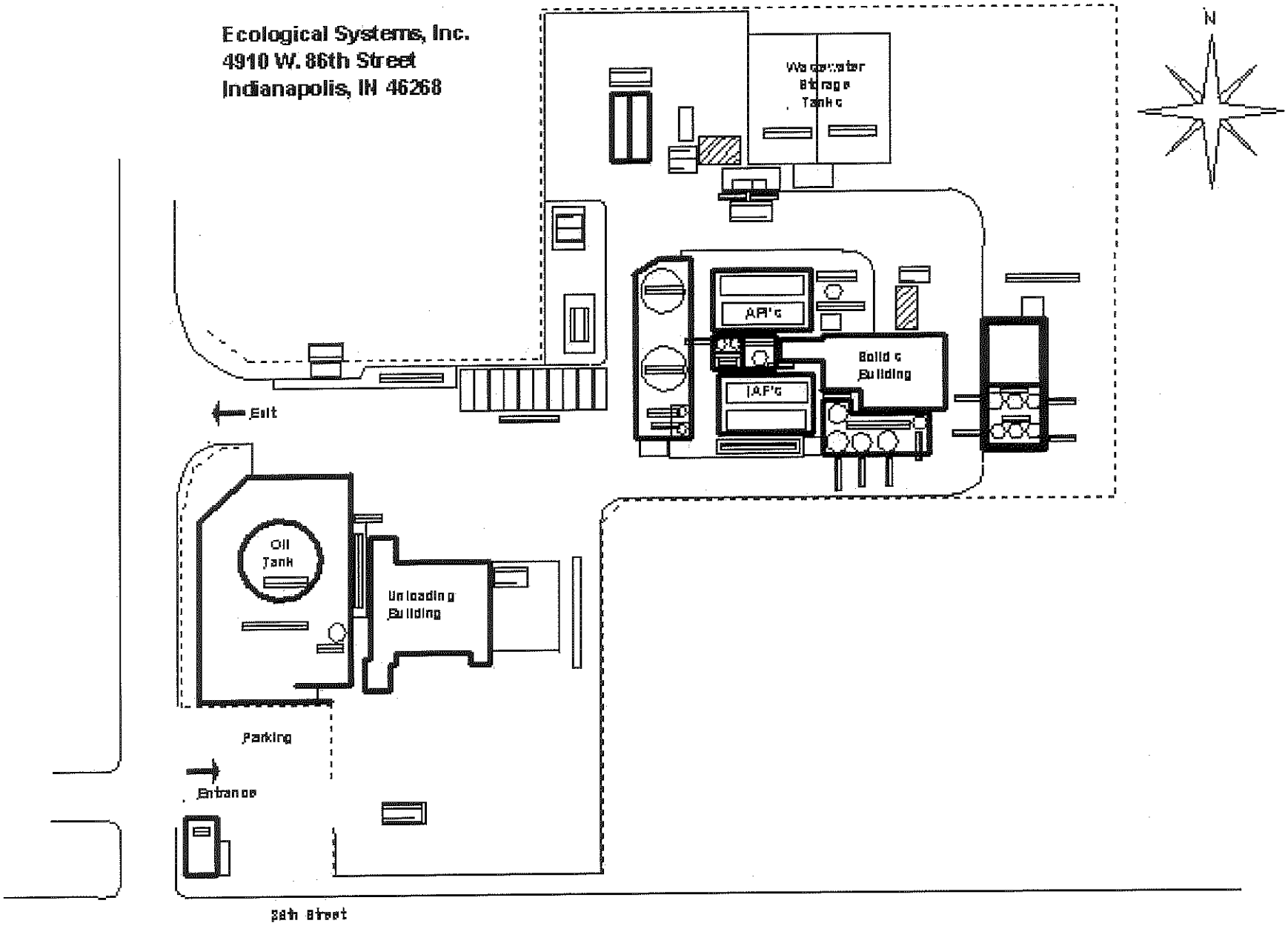
PCB Contamination Flow Analysis

Exhibit I





additional treatment of the water →


Ecological Systems, Inc.
4910 W. 86th Street
Indianapolis, IN 46268
N
Wastewater Storage Tanks
API's
Boiler Building
DAF's
Exit
Oil Tank
Unloading Building
Parking
Entrance
86th Street

PCB Flushing Process July 18-Aug14th – ESI Environmental, Inc.

- The following describes the flushing of ESI's oil recycling facility in Indianapolis, Indiana with kerosene and diesel after the ESI discovered that PCB contaminated oil had been introduced into the facility. This information was described in a telephone call with Priscilla Fonseca of USEPA and George Ritchotte of IDEM on August 21, 2007. This description supplements the information provided by ESI to EPA on August 9 and August 14, 2007. Equipment references here are the same as the designations on the flow diagram provided to EPA on August 9, 2007 unless noted otherwise. Frac Tank 15 and dehydration product tank 45 are not mentioned in this description because they were not contaminated with PCBs and therefore were not part of the decontamination process. Tank 45 was not in operation and Frac Tank 15 was not being filled with product when the Bee Loads were received and processed or in the intervening time. After ESI was notified of PCBs, ESI sampled Tanks 15 and 45 and both were non-detect for PCBs.

Flushing Activities

- Prior to the first flush with kerosene described below, ESI had stopped processing used oil after discovering potential PCB contamination, but the system had been flushed for 10-12 days after the first Bee Load by the hundreds of thousands of gallons of fresh, PCB-free used oil that had been run through the system. Most of that flushed material was in Tank 51, and some was in some of the product frac tanks. In preparation for the first flush with kerosene, the contents of Tanks 12,13,14,41,42,43,44,46, frac tanks 6,10, 11 and 13, the oil unloading sump tank, and the dehydration pot and reboiler were pumped to Tank 51.
- ESI opened tanks 12,13,14, 41,42,43,44,46, frac tanks 6,10,11, and 13, and the oil unloading sump tank and removed all residual solids. These solids are stored in two clean, mobile frac tanks, 536 and 529. There are approximately 17,000 gallons of material in each of these two frac tanks. Results of sampling of these solids are on Exhibit A (which also includes results – which were non-detect – of samples taken from Frac Tank 6 and "West Million," also described as the Initial Storage Tank, Item C, on the flow diagram provided previously). The accumulated centrifuge sludge (from point H in the flow diagram) was sampled and analyzed to be 7.58 ppm PCBs. This sludge remains in the portable storage tank next to the centrifuge waiting for disposal.
- ESI flushed points D, E, F, G and H indicated in the flow diagram three times, each time with 2000 gallons of fresh kerosene (jet fuel) (just over 10% of the capacity of the largest of these tanks). The kerosene was first sampled to confirm it did not contain PCBs. See analytical results at Exhibit B. This initial kerosene flush is described on the August 1, 2007 "PCB Flushing Updated SOP" attached as Exhibit C (the "fry basket" mentioned in the first step of that SOP is the name commonly used for the Oil Unloading Sump Tank, item D on the flow diagram).

This and the other SOPs were prepared by Joe Biggio, VP of Operations for ESI, and distributed to the plant operators for implementation. Under this SOP, Tanks 12,13,14,42,43,44, and 46, the dehydration pot and reboiler, the oil unloading sump, and frac tank 11 were rinsed using 2000 gallons of fresh kerosene (jet fuel) each rinse. This set of three flushes started around 4PM on 8/1 and were completed by midnight that evening. The PCB concentrations in each 2000 gallon batch of kerosene solvent used in these three flushes are listed on Exhibit D. This <50 ppm PCB flush material was held in Tank 42 for reuse in the second set of 3 flushes, described next.

- The second set of 3 flushes on 8/2/07 flushed Tanks 41 and 42 and frac tanks 6 and 10 (points I and J on the flow diagram), with each of the 3 flushes using 2000 gallons (just over 10% of the capacity of the tanks) of the <50 ppm PCB kerosene from Tank 42 as the flush solvent. The flushes were done using the August 2, 2007 version of the "PCB Flushing Updated SOP," labeled Exhibit E. A sample was taken at the end of each flush and the results are listed on Exhibit F.
- ESI performed a third set of flushes on all these tanks, from point D at the beginning of the process, through the process and into the product frac tanks at the end of the process, beginning on 8/9/07, pursuant to the August 9, 2007 "PCB Flushing Updated SOP" marked as Exhibit G. We purchased 14,000 gallons of virgin diesel fuel. The diesel was unloaded into the oil unloading sump and pumped from there to Tank 12 where it was blended with 3000-4000 gallons of fresh kerosene for a total of 17,000-18,000 gallons, which is the capacity of the largest of the tanks being flushed. This material was used to fill and flush Tanks 12,13,14,41,42,and 46, frac tanks 6,10,11, and 13, and the dehydration pot and reboiler and the centrifuge, each of which was flushed three times. Flushing began on 8/9 and ended on 8/10. A sample of the final flush was taken and was ND for PCBs. See analyses on Exhibit H. 14,000 gallons of this flush material was then pumped to Tank 51. About 4000 gallons are stored in vac truck 421 (which along with the "trailer L139" indicated on Exhibit H was used to collect the solvent as it was pumped through the loading rack at the end of the process and to pump the solvent to Tank 51). Both truck 521 and trailer L139 also were flushed as part of this final flushing process.
- While carrying out this third and final flushing process with 18,000 gallons of diesel/kerosene, the technicians pumped through all hoses, pipelines, and valves associated with the normal and special uses of this equipment. They marked the flushed lines with color coded tape during each flush to keep track of their progress.
- All filters were flushed 3 times and taped to signify complete flushing.
- All sample lines were flushed 3 times and taped to signify complete flushing.
- All lower, upper, and over-the-top lines into each tank were flushed 3 times and taped to signify complete flushing.
- All loads of product oil that were retrieved in-transit or from customers when ESI first learned of the PCBs on July 18 were returned to the plant and pumped to Tank 51.
- A summary of the inventory of PCB contaminated material at the facility as of August 22 is attached as Exhibit I. In the description of the material, we have

indicated how we understand the material is to be handled, as described in our previous correspondence with EPA.

EXHIBIT A

Analytical Resources
809 Overstreet Ave.
Franklin, In 46131
Phone:(317)496-5095
Fax(317)738-4105

Certificate of Analysis

Date:08/14/07

Customer: **Ecological Systems, Inc.** **Date Received:08/14/07**

Matrix: Oil

Parameter	Method	Detection Limit	Result(mg/kg)	Arocior
PCB's				
Sample ID				
FRAC TK 6	SW846-8082	2.0 ppm	ND	
WEST MILLION	SW846-8082	2.0 ppm	ND	
FRAC TK 529	SW846-8082	2.0 ppm	14.95	1260
FRAC TK 536	SW846-8082	2.0 ppm	ND	

Lab Manager

EXHIBIT B

Analytical Resources
809 Overstreet Ave.
Franklin, In 46131
Phone:(317)496-5095
Fax(317)738-4105

Certificate of Analysis

Date:08/01/07

Customer: **Ecological Systems, Inc.** **Date Received:08/01/07**

Matrix: Oil

Parameter	Method	Detection Limit	Result(mg/kg)	Aroclor
PCB's				
Sample ID				
E07212-60	SW846-8082	1.0 ppm	ND	
E07212-62	SW846-8082	1.0 ppm	ND	

ND=Not detected at reported detection limit

Lab Manager

EXHIBIT C – August 1, 2007

PCB Flushing Updated SOP

It has been determined we need to modify our previous SOP for flushing the tank with PCB contaminated material. I have outlined the new procedure below.

- We will flush the system with 2000 gallons of jet fuel (kerosene) in the following order.
    - Fry basket to crack tank 12
    - Crank 12 to the dehy pot
    - Recirculate thru the reboiler for 10 minutes.
    - Empty the dehy pot and isolate the reboiler.
    - Empty the dehy pot into the tank 43.
    - Transfer 43 to the fry basket.
    - Fry basket to crack tank 13.
    - Crack tank 13 to dehy pot.
    - Dehy pot to tank 44.
    - Tank 44 to fry basket.
    - Fry basket to crack tank 14.
    - Crack tank 14 to dehy pot.
    - Dehy pot to tank 46.
    - Tank 46 to frac tank 11.
    - Frac tank 11 to 42.
    - Pull sample and label it with flush number and date. (Ex. First flush 8/1)
    - Hold product in 42.

Repeat this process top to bottom 3 times using 2000 gallons of new material every time we restart this process. We will store the rinsate in tank 42 for now.

EXHIBIT D

Analytical Resources
809 Overstreet Ave.
Franklin, In 46131
Phone:(317)496-5095
Fax(317)738-4105

Certificate of Analysis

Date:08/02/07

Customer: **Ecological Systems, Inc.** **Date Received:08/02/07**

Matrix: Oil

Parameter	Method	Detection Limit	Result(mg/kg)	Aroclor
PCB's				
Sample ID				
West Million	SW846-8082	1.0 ppm	2.90	1260
1st Flush	SW846-8082	2.0 ppm	18.62	1260
2nd Flush	SW846-8083	2.0 ppm	6.83	1260
3rd Flush	SW846-8084	2.0 ppm	3.21	1260

Lab Manager

EXHIBIT E – August 2, 2007

PCB Flushing Updated SOP

Phase 2 of the rinsing procedure is outlined below.

- We will flush the system with 2000 gallons of jet fuel (kerosene) in the following order. Pull as sample from tank 42 before we start the rinse cycle.
    - Tank 42 into Frac Tank 13
    - Frac Tank 13 into tank 41
    - Tank 41 into Frac tank 6
    - Frac tank 6 into Frac tank 10
    - Frac tank 10 into 51
    - Pull a sample from frac tank 10 rinsate after every cycle.

Repeat this process top to bottom 3 times using 2000 gallons of new material every time we restart this process.

EXHIBIT F

Analytical Resources
809 Overstreet Ave.
Franklin, In 46131
Phone:(317)496-5095
Fax(317)738-4105

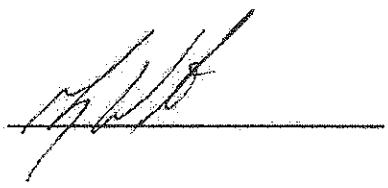
Certificate of Analysis

Date:08/05/07

Customer: **Ecological Systems, Inc.** **Date Received:08/03/07**

Matrix: Oil

Parameter	Method	Detection Limit	Result(mg/kg)	Arocior
PCB's				
Sample ID				
TK 4 SLUDGE	SW846-8082	1.0 ppm	ND	1260
TK 14 SLUDGE	SW846-8082	1.0 ppm	ND	1260
FT10 1ST FLUSH	SW846-8082	1.0 ppm	16.78	1260
FT10 2ND FLUSH	SW846-8082	1.0 ppm	22.83	1260
FT10 3RD FLUSH	SW846-8082	1.0 ppm	18.93	1260



Lab Manager

EXHIBIT G – August 9, 2007

PCB Flushing Updated SOP

Please follow the flushing procedure outlined below.

- We will flush the system with 17,000 gallons of diesel fuel and kerosene in the following order.
  - Fry basket to crack tank 12
  - Crack tank 12 to fry basket
  - Fry basket to 13
  - Crack 13 to Fry basket
  - Fry basket to Crack14
  - Crank 14 to the dehy pot
  - Recirculate thru the reboiler for 10 minutes.
  - Empty the dehy pot and isolate the reboiler.
  - Empty the dehy pot into the tank 42.
  - Transfer 42 to tank 46.
  - Tank 46 to frac tank 13.
  - Frac tank 13 to frac tank 11.
  - Frac tank 11 to 41.
  - 41 to frac tank 10.
  - Frac tank 10 to frac tank 6.
  - Pull sample and label it with flush number and date. (Ex. First flush 8/1)
  - Hold product in frac tank 6.
  - Frac tank 6 into trailer 139.
  - Sample and test trailer 139 for pcb's

EXHIBIT H

Environmental Certification Labs, Inc.

Mr. Mark Snow
ESI Environmental
4910 W. 86th Street
Indianapolis, IN 46268

10-Aug-07

Project name:
PO Number: 10693
Sampled By:
Job Number: 070800312

Customer Sample ID: **Sample Description:** Trailer L139
Sample Matrix: O **Sample Type:**
Sample Date: 08/10/07 **Sample Time:** 8:30
ECL Sample ID: AB40848

Parameter	Analysis	Units	Detection Limit	Method	Analysis Date	Analyst
PCB						
Arochlor 1016	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG
Arochlor 1221	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG
Arochlor 1232	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG
Arochlor 1242	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG
Arochlor 1248	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG
Arochlor 1254	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG
Arochlor 1260	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG

Report Approved By: Mr. Tim Voll, Quality Assurance Manager / Mr. Jac L. Padgett, President

BDL - Below Detection Limit

11422 North US Highway 41
P.O. Box 569
Farmersburg, IN 47850-0569
T: (812) 696.5076
F: (812) 696.2596
www.eclabs.org

EXHIBIT I

Inventory of PCB contaminated material as of 8/22/07
Volumes are estimates +/- 10%

Tank # or name	Volume in gallons	PCB concentration in ppm	Description of material
Frac tank 1	14,800	34	TSCA regulated
Frac tank 9	17,000	59	TSCA regulated
Frac Tank 2	17,000	32	Flush Material
Frac Tank 3	17,000	30	Flush Material
Frac Tank 4	17,000	17	Flush Material
Frac Tank 5	17,000	21	Flush Material
Frac Tank 7	2,900	34	Flush Material
Frac Tank 8	12,200	41	Flush Material
Frac Tank 529	17,000	15	Tank heals ND = non-detect
Frac Tank 536	17,000	ND	Tank heals ND = non-detect
Tank 51	925,000	22	Flush Material
Portable sludge tank	3000	7	Centrifuge sludge
Vac truck 421	4000	ND	Flush material

EXHIBIT I

Inventory of PCB contaminated material as of 8/22/07
Volumes are estimates +/- 10%

Tank # or name	Volume in gallons	PCB concentration in ppm	Description of material
Frac tank 1	14,800	34	TSCA regulated
Frac tank 9	17,000	59	TSCA regulated
Frac Tank 2	17,000	32	Flush Material
Frac Tank 3	17,000	30	Flush Material
Frac Tank 4	17,000	17	Flush Material
Frac Tank 5	17,000	21	Flush Material
Frac Tank 7	2,900	34	Flush Material
Frac Tank 8	12,200	41	Flush Material
Frac Tank 529	17,000	15	Tank heals ND = non-detect
Frac Tank 536	17,000	ND	Tank heals ND = non-detect
Tank 51	925,000	22	Flush Material
Portable sludge tank	3000	7	Centrifuge sludge
Vac truck 421	4000	ND	Flush material

EXHIBIT H

Environmental Certification Labs, Inc.

Mr. Mark Snow
ESI Environmental
4910 W. 86th Street
Indianapolis, IN 46268

10-Aug-07

Project name:
PO Number: 10693
Sampled By:
Job Number: 070800312

Customer Sample ID: **Sample Description:** Trailer L139
Sample Matrix: O **Sample Type:**
Sample Date: 08/10/07 **Sample Time:** 8:30
ECL Sample ID: AB40848

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PCB						
Arochlor 1016	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG
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Arochlor 1232	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG
Arochlor 1242	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG
Arochlor 1248	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG
Arochlor 1254	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG
Arochlor 1260	<2.00	mg/kg	2.00	EPA 8082A	08/10/07	CBG

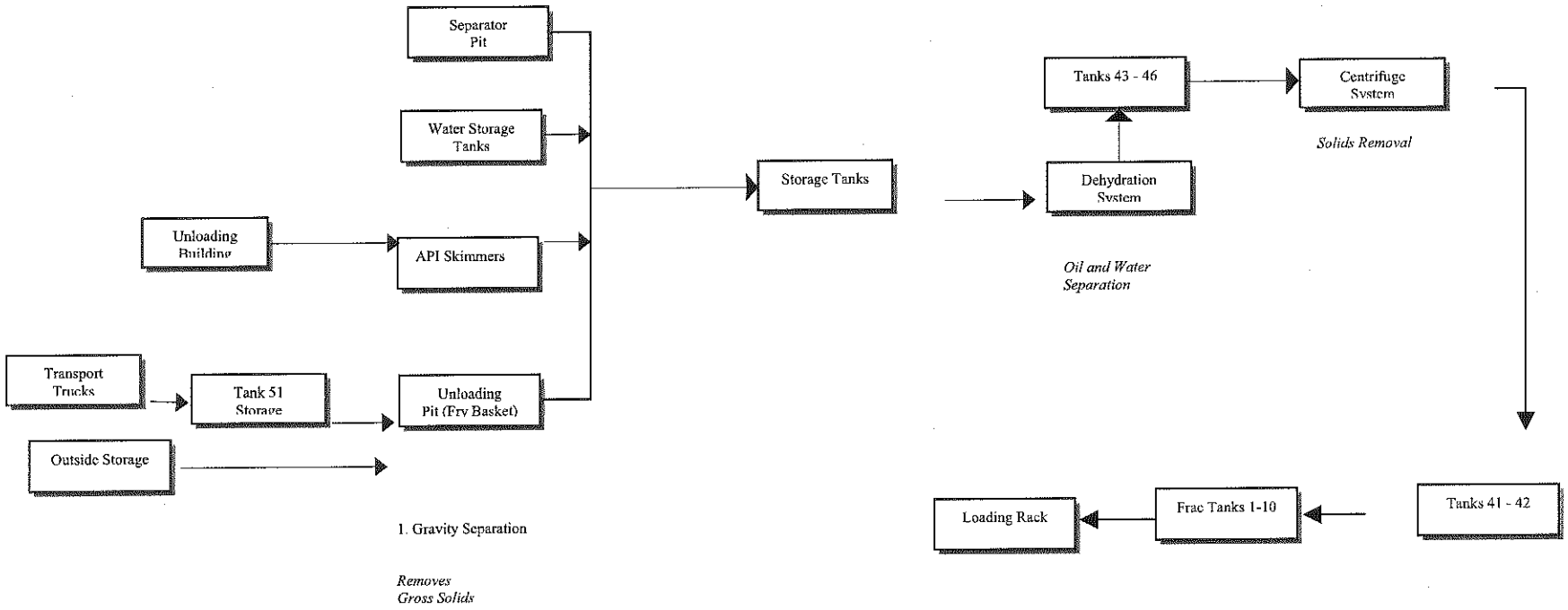
Report Approved By: Mr. Tim Voll, Quality Assurance Manager / Mr. Jac L. Padgett, President

BDL - Below Detection Limit

11422 North US Highway 41
P.O. Box 569
Farmersburg, IN 47850-0569
T: (812) 696.5076
F: (812) 696.2596
www.eclabs.org

FIGURE 5.3 - Treatment Technology Flow

OIL PROCESS FLOW PATH



PCB Flushing Process July 18-Aug14th – ESI Environmental, Inc.

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Flushing Activities

- Prior to the first flush with kerosene described below, ESI had stopped processing used oil after discovering potential PCB contamination, but the system had been flushed for 10-12 days after the first Bee Load by the hundreds of thousands of gallons of fresh, PCB-free used oil that had been run through the system. Most of that flushed material was in Tank 51, and some was in some of the product frac tanks. In preparation for the first flush with kerosene, the contents of Tanks 12,13,14,41,42,43,44,46, frac tanks 6,10, 11 and 13, the oil unloading sump tank, and the dehydration pot and reboiler were pumped to Tank 51.
- ESI opened tanks 12,13,14, 41,42,43,44,46, frac tanks 6,10,11, and 13, and the oil unloading sump tank and removed all residual solids. These solids are stored in two clean, mobile frac tanks, 536 and 529. There are approximately 17,000 gallons of material in each of these two frac tanks. Results of sampling of these solids are on Exhibit A (which also includes results -- which were non-detect – of samples taken from Frac Tank 6 and "West Million," also described as the Initial Storage Tank, Item C, on the flow diagram provided previously). The accumulated centrifuge sludge (from point H in the flow diagram) was sampled and analyzed to be 7.58 ppm PCBs. This sludge remains in the portable storage tank next to the centrifuge waiting for disposal.
- ESI flushed points D, E, F, G and H indicated in the flow diagram three times, each time with 2000 gallons of fresh kerosene (jet fuel) (just over 10% of the capacity of the largest of these tanks). The kerosene was first sampled to confirm it did not contain PCBs. See analytical results at Exhibit B. This initial kerosene flush is described on the August 1, 2007 "PCB Flushing Updated SOP" attached as Exhibit C (the "fry basket" mentioned in the first step of that SOP is the name commonly used for the Oil Unloading Sump Tank, item D on the flow diagram).

This and the other SOPs were prepared by Joe Biggio, VP of Operations for ESI, and distributed to the plant operators for implementation. Under this SOP, Tanks 12,13,14,42,43,44, and 46, the dehydration pot and reboiler, the oil unloading sump, and frac tank 11 were rinsed using 2000 gallons of fresh kerosene (jet fuel) each rinse. This set of three flushes started around 4PM on 8/1 and were completed by midnight that evening. The PCB concentrations in each 2000 gallon batch of kerosene solvent used in these three flushes are listed on Exhibit D. This <50 ppm PCB flush material was held in Tank 42 for reuse in the second set of 3 flushes, described next.

- The second set of 3 flushes on 8/2/07 flushed Tanks 41 and 42 and frac tanks 6 and 10 (points I and J on the flow diagram), with each of the 3 flushes using 2000 gallons (just over 10% of the capacity of the tanks) of the <50 ppm PCB kerosene from Tank 42 as the flush solvent. The flushes were done using the August 2, 2007 version of the "PCB Flushing Updated SOP," labeled Exhibit E. A sample was taken at the end of each flush and the results are listed on Exhibit F.
- ESI performed a third set of flushes on all these tanks, from point D at the beginning of the process, through the process and into the product frac tanks at the end of the process, beginning on 8/9/07, pursuant to the August 9, 2007 "PCB Flushing Updated SOP" marked as Exhibit G. We purchased 14,000 gallons of virgin diesel fuel. The diesel was unloaded into the oil unloading sump and pumped from there to Tank 12 where it was blended with 3000-4000 gallons of fresh kerosene for a total of 17,000-18,000 gallons, which is the capacity of the largest of the tanks being flushed. This material was used to fill and flush Tanks 12,13,14,41,42,and 46, frac tanks 6,10,11, and 13, and the dehydration pot and reboiler and the centrifuge, each of which was flushed three times. Flushing began on 8/9 and ended on 8/10. A sample of the final flush was taken and was ND for PCBs. See analyses on Exhibit H. 14,000 gallons of this flush material was then pumped to Tank 51. About 4000 gallons are stored in vac truck 421 (which along with the "trailer L139" indicated on Exhibit H was used to collect the solvent as it was pumped through the loading rack at the end of the process and to pump the solvent to Tank 51). Both truck 521 and trailer L139 also were flushed as part of this final flushing process.
- While carrying out this third and final flushing process with 18,000 gallons of diesel/kerosene, the technicians pumped through all hoses, pipelines, and valves associated with the normal and special uses of this equipment. They marked the flushed lines with color coded tape during each flush to keep track of their progress.
- All filters were flushed 3 times and taped to signify complete flushing.
- All sample lines were flushed 3 times and taped to signify complete flushing.
- All lower, upper, and over-the-top lines into each tank were flushed 3 times and taped to signify complete flushing.
- All loads of product oil that were retrieved in-transit or from customers when ESI first learned of the PCBs on July 18 were returned to the plant and pumped to Tank 51.
- A summary of the inventory of PCB contaminated material at the facility as of August 22 is attached as Exhibit I. In the description of the material, we have

indicated how we understand the material is to be handled, as described in our previous correspondence with EPA.

EXHIBIT A

Analytical Resources
809 Overstreet Ave.
Franklin, In 46131
Phone:(317)496-5095
Fax(317)738-4105

Certificate of Analysis

Date:08/14/07

Customer: **Ecological Systems, Inc.** **Date Received:08/14/07**

Matrix: Oil

Parameter	Method	Detection Limit	Result(mg/kg)	Aroclor
PCB's				
Sample ID				
FRAC TK 6	SW846-8082	2.0 ppm	ND	
WEST MILLION	SW846-8082	2.0 ppm	ND	
FRAC TK 529	SW846-8082	2.0 ppm	14.95	1260
FRAC TK 536	SW846-8082	2.0 ppm	ND	

Lab Manager

EXHIBIT B

Analytical Resources
809 Overstreet Ave.
Franklin, In 46131
Phone:(317)496-5095
Fax(317)738-4105

Certificate of Analysis

Date:08/01/07

Customer: **Ecological Systems, Inc.** **Date Received:08/01/07**

Matrix: Oil

Parameter	Method	Detection Limit	Result(mg/kg)	Aroclor
PCB's				
Sample ID				
E07212-60	SW846-8082	1.0 ppm	ND	
E07212-62	SW846-8082	1.0 ppm	ND	

ND=Not detected at reported detection limit

Lab Manager

EXHIBIT C – August 1, 2007

PCB Flushing Updated SOP

It has been determined we need to modify our previous SOP for flushing the tank with PCB contaminated material. I have outlined the new procedure below.

- We will flush the system with 2000 gallons of jet fuel (kerosene) in the following order.
  - Fry basket to crack tank 12.
  - Crank 12 to the dehy pot
  - Recirculate thru the reboiler for 10 minutes.
  - Empty the dehy pot and isolate the reboiler.
  - Empty the dehy pot into the tank 43.
  - Transfer 43 to the fry basket.
  - Fry basket to crack tank 13.
  - Crack tank 13 to dehy pot.
  - Dehy pot to tank 44.
  - Tank 44 to fry basket.
  - Fry basket to crack tank 14.
  - Crack tank 14 to dehy pot.
  - Dehy pot to tank 46.
  - Tank 46 to frac tank 11.
  - Frac tank 11 to 42.
  - Pull sample and label it with flush number and date. (Ex. First flush 8/1)
  - Hold product in 42.

Repeat this process top to bottom 3 times using 2000 gallons of new material every time we restart this process. We will store the rinsate in tank 42 for now.

EXHIBIT D

Analytical Resources
809 Overstreet Ave.
Franklin, In 46131
Phone:(317)496-5095
Fax(317)738-4105

Certificate of Analysis

Date:08/02/07

Customer: **Ecological Systems, Inc.** **Date Received:08/02/07**

Matrix: Oil

Parameter	Method	Detection Limit	Result(mg/kg)	Aroclor
PCB's				
Sample ID				
West Million	SW846-8082	1.0 ppm	2.90	1260
1st Flush	SW846-8082	2.0 ppm	18.62	1260
2nd Flush	SW846-8083	2.0 ppm	6.83	1260
3rd Flush	SW846-8084	2.0 ppm	3.21	1260

- each 2nd flush

How is this sample done - after each flush or end of each flush?

Lab Manager

EXHIBIT E – August 2, 2007

PCB Flushing Updated SOP

Phase 2 of the rinsing procedure is outlined below.

- We will flush the system with 2000 gallons of jet fuel (kerosene) in the following order. Pull as sample from tank 42 before we start the rinse cycle.
    - Tank 42 into Frac Tank 13
    - Frac Tank 13 into tank 41
    - Tank 41 into Frac tank 6
    - Frac tank 6 into Frac tank 10
    - Frac tank 10 into 51
    - Pull a sample from frac tank 10 rinsate after every cycle.

Repeat this process top to bottom 3 times using 2000 gallons of new material every time we restart this process.

EXHIBIT F

Analytical Resources
809 Overstreet Ave.
Franklin, In 46131
Phone:(317)496-5095
Fax(317)738-4105

Certificate of Analysis

Date:08/05/07

Customer: **Ecological Systems, Inc.** **Date Received:08/03/07**

Matrix: Oil

Parameter	Method	Detection Limit	Result(mg/kg)	Aroclor
PCB's				
Sample ID				
TK 4 SLUDGE	SW846-8082	1.0 ppm	ND	1260
TK 14 SLUDGE	SW846-8082	1.0 ppm	ND	1260
FT10 1ST FLUSH	SW846-8082	1.0 ppm	16.78	1260
FT10 2ND FLUSH	SW846-8082	1.0 ppm	22.83	1260
FT10 3RD FLUSH	SW846-8082	1.0 ppm	18.93	1260

Lab Manager

EXHIBIT G – August 9, 2007

PCB Flushing Updated SOP

Please follow the flushing procedure outlined below.

- We will flush the system with 17,000 gallons of diesel fuel and kerosene in the following order.
  - Fry basket to crack tank 12
  - Crack tank 12 to fry basket
  - Fry basket to 13
  - Crack 13 to Fry basket
  - Fry basket to Crack14
  - Crank 14 to the dehy pot
  - Recirculate thru the reboiler for 10 minutes.
  - Empty the dehy pot and isolate the reboiler.
  - Empty the dehy pot into the tank 42.
  - Transfer 42 to tank 46.
  - Tank 46 to frac tank 13.
  - Frac tank 13 to frac tank 11.
  - Frac tank 11 to 41.
  - 41 to frac tank 10.
  - Frac tank 10 to frac tank 6.
  - Pull sample and label it with flush number and date. (Ex. First flush 8/1)
  - Hold product in frac tank 6.
  - Frac tank 6 into trailer 139.
  - Sample and test trailer 139 for pcb's

ESI Environmental, Inc. | | | Exhibit II

Outbound Oil Shipments

July 10-July 18, 2007

order_no	customer_name	Amount shipped (gallons)	Date Shipped	Disposition
71480	EVERCLEAR OF OHIO	5,700	07/10	Received and burned at Republic Steel Mill, Lorraine, OH
71480	EVERCLEAR OF OHIO	5,800	07/10	Received and burned at Republic Steel Mill, Lorraine, OH
71481	EVERCLEAR OF OHIO	5,800	07/10	Received and burned at Republic Steel Mill, Lorraine, OH
71481	EVERCLEAR OF OHIO	6,000	07/10	Received and burned at Republic Steel Mill, Lorraine, OH
71481	EVERCLEAR OF OHIO	6,000	07/10	Received and burned at Republic Steel Mill, Lorraine, OH
71555	FAUSTE OIL SERVICES, INC.	5,700	07/10	Received and burned at various asphalt plants
71556	FAUSTE OIL SERVICES, INC.	5,700	07/10	Received and burned at various asphalt plants
71560	PERMA-FIX OF DAYTON, INC.	5,613	07/10	Load Tested By Customer and Accepted
71526	BEE ENVIRONMENTAL	6,000	07/11	Dispostion unknown
71521	CARBON INJECTION SYSTEMS, LLC	5,521	07/11	Received and burned at WIC Steel Mill, Warren, OH
71522	CARBON INJECTION SYSTEMS, LLC	6,168	07/11	Received and burned at WIC Steel Mill, Warren, OH
71481	EVERCLEAR OF OHIO	5,700	07/11	Received and burned at Republic Steel Mill, Lorraine, OH
71482	EVERCLEAR OF OHIO	6,000	07/11	Received and burned at Republic Steel Mill, Lorraine, OH
71482	EVERCLEAR OF OHIO	6,000	07/11	Received and burned at Republic Steel Mill, Lorraine, OH
71484	EVERCLEAR OF OHIO	6,000	07/11	Received and burned at Republic Steel Mill, Lorraine, OH
71523	CARBON INJECTION SYSTEMS, LLC	6,178	07/12	Received and burned at WIC Steel Mill, Warren, OH
71482	EVERCLEAR OF OHIO	5,200	07/12	Received and burned at Republic Steel Mill, Lorraine, OH
71484	EVERCLEAR OF OHIO	6,000	07/12	Received and burned at Republic Steel Mill, Lorraine, OH
71484	EVERCLEAR OF OHIO	6,000	07/12	Received and burned at Republic Steel Mill, Lorraine, OH
[illegible]84	EVERCLEAR OF OHIO	6,000	07/12	Received and burned at Republic Steel Mill, Lorraine, OH
[illegible]7	FAUSTE OIL SERVICES, INC.	5,700	07/12	Received and burned at various asphalt plants
[illegible]59	FAUSTE OIL SERVICES, INC.	5,700	07/12	Received and burned at various asphalt plants
71805	CARBON INJECTION SYSTEMS, LLC	6,511	07/15	Received and burned at WIC Steel Mill, Warren, OH
71803	EVERCLEAR OF OHIO	6,000	07/15	Received and burned at Republic Steel Mill, Lorraine, OH
71804	FAUSTE OIL SERVICES, INC.	5,472	07/15	Load Tested By Customer and Accepted
71803	EVERCLEAR OF OHIO	6,000	07/16	Received and burned at Republic Steel Mill, Lorraine, OH
71803	EVERCLEAR OF OHIO	6,000	07/16	Received and burned at Republic Steel Mill, Lorraine, OH
71803	EVERCLEAR OF OHIO	6,000	07/16	Received and burned at Republic Steel Mill, Lorraine, OH
71803	EVERCLEAR OF OHIO	6,000	07/16	Received and burned at Republic Steel Mill, Lorraine, OH
71821	EVERCLEAR OF OHIO	6,300	07/16	Received and burned at Republic Steel Mill, Lorraine, OH
71822	FAUSTE OIL SERVICES, INC	5,700	07/16	Load Returned
71824	SYSTECH ENVIRONMENTAL - JOPPA	6,146	07/16	Load Tested By Customer and Accepted
71823	CARBON INJECTION SYSTEMS, LLC	6,162	07/17	Received and burned at WIC Steel Mill, Warren, OH
71827	CARBON INJECTION SYSTEMS, LLC	6,000	07/17	Received and burned at WIC Steel Mill, Warren, OH
71821	EVERCLEAR OF OHIO	6,000	07/17	Received and burned at Republic Steel Mill, Lorraine, OH
71821	EVERCLEAR OF OHIO	6,000	07/17	Received and burned at Republic Steel Mill, Lorraine, OH
71821	EVERCLEAR OF OHIO	6,000	07/17	Received and burned at Republic Steel Mill, Lorraine, OH
71825	EVERCLEAR OF OHIO	6,000	07/17	Received and burned at Republic Steel Mill, Lorraine, OH
71825	EVERCLEAR OF OHIO	6,000	07/17	Received and burned at Republic Steel Mill, Lorraine, OH
71826	FAUSTE OIL SERVICES, INC.	5,683	07/17	Load Tested By Customer and Accepted
71890	WARRIOR OIL	6,000	07/17	Load Returned
71825	EVERCLEAR OF OHIO	6,000	07/18	Received and burned at Republic Steel Mill, Lorraine, OH
71828	EVERCLEAR OF OHIO	5,800	07/18	Load Returned
71888	PERMA-FIX OF DAYTON, INC.	6,000	07/18	Load Returned
71932	PERMA-FIX OF DAYTON, INC.	6,000	07/18	Load Returned
		266,254		